Panasonic

ideas for life

P2 LINE-UP CATALOG
JULY. 2011

P2HD

AVC-INTRA DVCPRO HD DVCPRO 50 DVCPRO DV

High Quality, Low Cost, Low Power Consumption and High-Speed Transfers.
The P2HD Series Points to the Future of Broadcasting and Video Production.

Using the P2 card for professional recording, the Panasonic P2HD Series plays a pivotal role in the switch to file-based broadcasting and video production workflows. While the solid-state memory card offers outstanding reliability, speed and rewrite performance, the advanced AVC-Intra codec*1 lets you record hours of high-quality images. By ingesting P2 content files into IT equipment, images are able to retain the file-based format during transfer, editing, searching and archiving.

The Panasonic P2HD product line to grow and evolve. By taking advantage of the new optional wireless connectivity and high-quality proxy function, the AJ-HPX3100G Broadcast Camera Recorder expands the use of both metadata and proxy recording. The new additions to the lineup, the AJ-PCD30*2 P2 Drive and AG-HPD24*2 P2 Portable Deck, support the USB 3.0 interface to achieve a significant boost in the transfer speed. The AG-3DP1*3 is the first integrated twin-lens 3D camera-recorder of the series, and enables very high-quality 3D video production.

Panasonic P2HD products have no moving mechanism, use less power, and are designed to reuse recording medium, which, of course, helps to conserve the environment. They are a smart solution to today's imaging needs and lead directly to the future of broadcasting and video production.

*1: See the products listed on pages 11 to 18 for details of applicable models. *2: Scheduled for release in August 2011. *3: Scheduled for release in Winter 2011.

P2HD
64GB
P2 TCR 00:04:43.10 JOG STILL
TCR 00:00:09.25 STOP
SUPER
ON
OFF
BACKLIGHT
LIGHT
DARK
OFF
BRIGHTNESS
LEVEL
OW 23:59:50.00
00:00:10.00
00:00:30.00
V
A1
A2
A3
A4
START TC : 23:59:50.00
DUR : 00:00:05.01
TOTAL DUR : 00:00:48.19
AVC-INTRA100 1080/60i
manual
(2:P004R8)
Panasonic
PLAY LIST
SET
MULTI SEL
MENU
SHIFT
Memory Card Portable Recorder/Player AJ-HPM200
AAE07H2510 PROTECT
ABD06K1428 PROTECT
ABD06L1105 PROTECT
AAE07H2508 PROTECT
AAE07H2511 PROTECT
AAE0704682 PROTECT
Panasonic
AG-HPD24
POWER
AAT10A0478 PROTECT
AAT10A0478 PROTECT

With its high reliability, large capacity and fast data transfers

The time-saving P2 card reduces production costs, resulting in higher operating efficiency

High Reliability Supports Creativity

The P2HD being used in Alaska. Because no head clogging occurs with P2 equipment, it offers reliable operation under extremely harsh shooting conditions.

Image disturbances can be caused by vibration and impact, while recording/playback heads can be clogged by dust and other particles. These problems, which often occur under harsh video production conditions, are eliminated by recording onto the solid-state P2 card. The P2 card withstands impacts up to 1,500 G and vibrations up to 15 G, operates in temperatures from −20°C to 60°C (-4°F to 140°F), and can be stored in temperatures from −40°C to 80°C (-40°F to 176°F). The P2 card's rugged specifications ensure reliable recordings under harsh conditions and enhance newsgathering mobility. Because solid-state memory requires no transport mechanism, it eliminates the possibility of clogging that occurs with tapes. Because data is saved in files, there is no risk of accidentally overwriting valuable data. Multi-card slots prevent roll change errors. And, in addition to instant startup and quick access, the P2HD Series offers a wealth of functions, such as Pre-Rec, that ensure reliable recording of critical moments. With its superb reliability and performance, the P2HD Series lets you record smoothly under rigorous field conditions and provides powerful support to creative video production.

64 GB Capacity Extends Recording Times and Lowers Costs

The P2 card offers up to 64 GB*1 of storage capacity. A single P2 card can record up to 64 minutes*2 with the DVCPRO HD or AVC-Intra 100 codec or up to 128 minutes*2 with the AVC-Intra 50 codec.*3 This large capacity provides sufficient recording time even for a handheld camera recorder or portable recorder with two card slots. With semiconductor memory capacity increasing yearly, you can expect even larger-capacity P2 cards with even greater economy in the future.

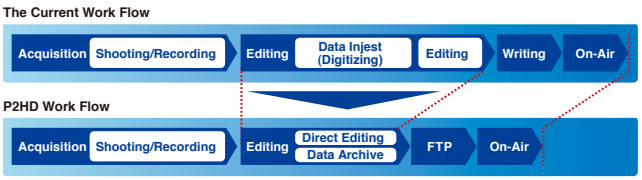
*1: Total card capacity includes space for data management, such as system data; therefore, actual usable area is less than the capacity indicated on the card.
*2: A 64GB P2 card can record 80 minutes in AVC-Intra 100 1080/23.98p or 160 minutes in AVC-Intra 100 / DVCPRO HD 720/23.98p.
*3: See the products listed on pages 11 to 18 for details of AVC-Intra-ready models.

High-Speed Data Transfer to IT Systems Boosts Operating Efficiency

Files are saved onto the P2 card in MXF format. This allows direct data transfers to IT-based broadcasting and production systems configured with Non-linear editors and network servers. P2 equipment also comes with USB and / or IEEE 1394 interfaces to support both Windows and Mac systems. A P2 drive with higher transfer speed of PCI express is also available. The P2 card mounts* directly to the PC card slot of a laptop PC. In addition to file-based recording, the P2 card boasts fast access and data transfer speeds, enabling direct on-card editing. Non-linear editing can also begin without digitizing or other time-consuming operations. Further, editing can be performed while transferring or saving recordings to a hard disk or other archiving system in the background. These features significantly reduce program production times, decrease the size of production crews, save labor, and increase cost benefits to operation and management.

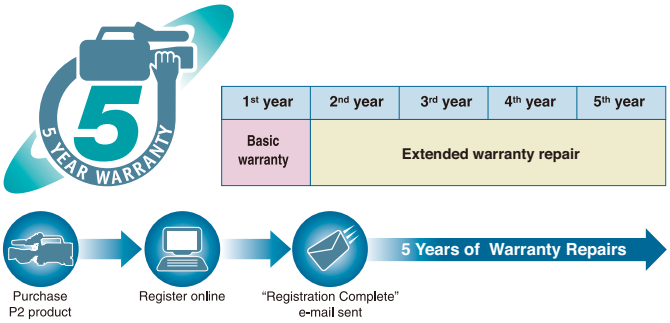
* The PC must be installed with the included P2 driver in order to mount P2 cards. For editing, the PC must be installed with P2-compatible editing software available from various companies. Read "Notes Regarding the Handling of P2 Files Using a PC" on the back page.

Work Flow Comparison



P2HD 5 Year Warranty Repair Program

The P2HD 5 year warranty repair program further enhances selecting P2 camera recorder's and recorder's outstanding reliability and durability, and helps to reduce running costs. Once you purchase an applicable model (indicated by a mark on the catalog's product introduction pages), simply register it at Panasonic's Website to be eligible for maximum five year warranty repair service.



*Please note that this program is not available in some countries and regions. The basic warranty period may vary depending on the country or region. Not all repair work is covered by this extended warranty. The maximum warranty period may be adjusted depending on the number of hours the devices have been used. Details about user registration and the program: For US Customers; www.panasonic.com/broadcast, For Outside US; http://panasonic.biz/sav/pass_e

Metadata, Proxy Recording, and High-Speed Transfers

P2HD Revolutionizes Broadcasting and Video Production Workflows

Compatible with Super-Speed USB 3.0 and Featuring a Wide Range of IT Interfaces

P2 files are based on the Material eXchange Format (MXF). They can be directly used in a compatible nonlinear editing system. They can also be easily copied to an ordinary HDD and SSD. You can transfer and share P2 files over a LAN, the Internet or other networks to achieve a smoother broadcast server and archiving operation. The new models, the AJ-PCD30 P2 Drive and AG-HPD24 P2 Portable Deck, support super-speed USB 3.0 to further streamline your workflow.

Wireless Connectivity and Metadata Management of Source Material

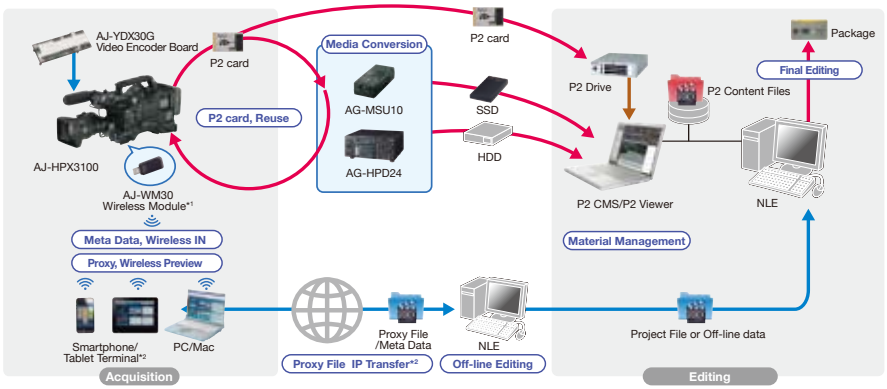
P2 files can be provided with metadata containing the recording time, GPS position (when mounted with the option), text information (such as content name and staff information) and text memos tagged to selected frames. The AJ-HPX3100G P2 Camera Recorder uses a new wireless connection function*1 to input metadata from a tablet terminal or smartphone. This makes it easier to use metadata. P2 Viewer or P2 CMS software for Windows PC or Mac*2 can also be used to edit metadata after recording. The use of metadata simplifies the search and management of source materials, and helps to achieve seamless editing, broadcasting and archiving. Metadata searches and proxy previews are also possible even after source materials are archived. This lets you easily and effectively utilize your video assets.

More Functional Proxy Data for Flash News Reports and Offline Editing

P2 camera recorders (compatible models) can generate low-rate proxy data (video and audio) for Breaking news transferred by Public network or Webcasts. The proxy data and the original data contain the same metadata, so the bulk of the editing work can be efficiently handled in advance with offline editing using proxy data. The AJ-HPX3100G P2 Camera Recorder can also generate*3 higher-quality proxy data (H.264 compression, Quick Time) and allows proxy previews on a wireless terminal.

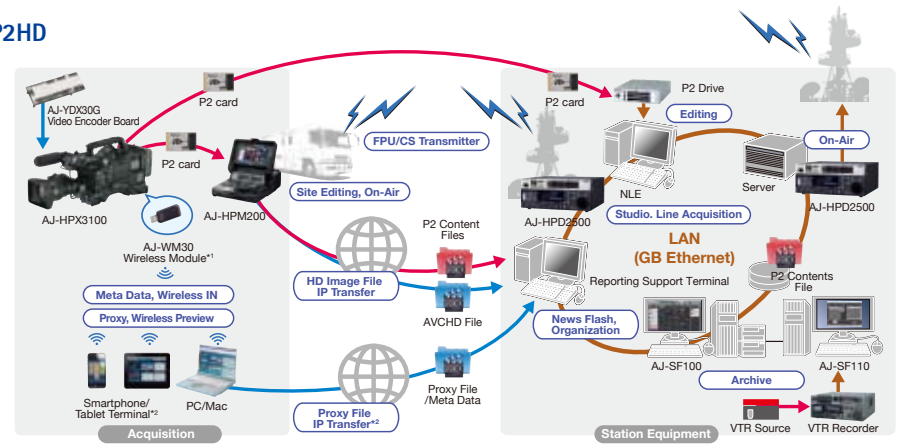
*1: The optional AJ-WM30 Wireless Module and AJ-SFU3100G Upgrade Software Key are required for wireless connection. A device is connected in ad-hoc mode only.
*2: The included P2 driver must be installed in the Windows PC or Mac. Refer to the "service and support" on the Panasonic Website (http://pro-av.panasonic.net/). See page 20 for details about P2 Viewer and P2 CMS.
*3: The optional AJ-YDX30G Video Encoder Board is required for using proxy data.

Program Production Workflows with P2HD



Panasonic offers a diverse range of products that let you copy files from a P2 card to an HDD or SSD at the acquisition site. Files can be uploaded from a P2 Drive (USB 3.0, PCI Express, USB 2.0 and IEEE 1394 interfaces supported), SSD or HDD — without digitizing. The P2 CMS or P2 Viewer (free download available)*3 manages the content in your production work. And proxy data can be used in offline editing*4 and for Webcasts.

News Workflows with P2HD



When recording, a variety of information is registered as metadata in P2HD files and proxy files. Recordings can then be transmitted to a station by a Field Pick-up Unit (FPU) from a broadcast van equipped with the AJ-HPM200 or delivered on a P2 card, HDD or SSD. Prior to the data's arrival, low-rate proxy or AVCHD*5 files can be transferred by FTP over the Internet for on-air broadcasting of breaking news, program scheduling, or off-line editing.*3 All recordings are archived so network terminals inside the station can search for and preview them based on metadata.*6

*1: The optional AJ-WM30 Wireless Module and AJ-SFU3100G Upgrade Software Key are required for wireless connection. A device is connected in ad-hoc mode only. *2: Proxy data can be saved only in PCs/Macs.
*3: See page 20 for details about P2 Viewer and P2 CMS. *4: Apple Final Cut Pro 7 supports P2 Proxy editing to accept off-line Final Cut Pro 7 project file for the final editing. *5: Conversion to AVCHD files requires an AJ-HPM200 Memory Card Recorder equipped with an optional AJ-YCX250G AVCHD Codec Board. *6: See page 26 in this catalog for information on P2 alliance partners.

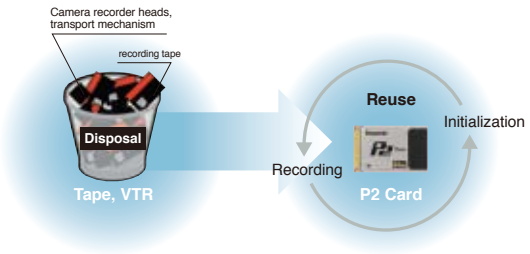
Preserving Beauty Both In Images and in the Environment

P2HD Helps the Environment by Reusing and Reducing

P2HD Can Reduce About 2 Tons* of CO2 Emissions per TV Station per Year

Cutting CO2 emissions to protect the environment, and particularly to prevent global warming, is an urgent, worldwide issue. From a management standpoint, environmental efforts are being increasingly reflected in the image and value of today's corporations. P2HD products meet the stringent Panasonic "Green Product" certification standards, which testifies for their excellent environmental performance.

Reusing: Because abrasion-free, dropout-free P2 cards can be rewritten, TV stations don't generate large amounts of used tape like they do with VTRs. Also, because P2HD systems use solid-state memory, there are fewer parts to replace — such as recording heads and transport mechanism — which again cuts down on waste.



Reducing: P2 memory card recorders are lighter and require less power than VTRs for both recording and editing. For example, compared with our previous AJ-LT95 DVCPRO 50 Laptop Editor, the AJ-HPM200 P2 Mobile Recorder uses about 58% less electricity and its weight is reduced by about 49%.

AJ-LP95 (2000–2003)
Power Consumption: 144 W
Weight: 12.9 kg (28.4 lbs)

AJ-HPM200
Power Consumption: 60 W
Weight: 6.6 kg (14.6 lbs)

These two achievements alone are able to cut about 2 tons* of CO2 emissions per station per year. In actual use, a variety of other processes combine to reduce power consumption even more, such as the fact that a compact, lightweight design and fast start-up let you stand-by on location with the power turned off. P2HD is closely linked with environmental conservation in routine broadcasting and production operations, making it a true with next-generation technology.

* Using Panasonic 30-minute DVCPRO HD tapes and assuming that a TV station requires 10,000 cassette tapes per year. The reduction in CO2 emissions from the raw materials of 10,000 cassette tapes is calculated to be 1.52 tons.
Also, the difference in power consumption per unit between the AJ-LT95 Laptop Editor and AJ-HPM200 P2 Mobile Recorder is 84 watts, or approximately 245 kWh per year (84 W x 8 hours x 365 days). Assuming that a TV station replaces five AJ-LT95 units with five AJ-HPM200 units with the reduction in CO2 emissions is approximately 475 Kilograms.
Combining this with the 1.52 tons calculated above makes a total CO2 emission reduction effect of approximately 2 tons per year.

(According to a Panasonic survey.)

New Devices Further Cut Power Consumption

Reducing power consumption is one of the highest priorities in the development of P2HD products. In the new AJ-HPX3100G camera recorder, new integrated circuits, including a digital signal processor and an AVC-Intra codec LSI, have further reduced the size of circuit boards. In addition to cutting size and weight, the new circuits lower power consumption. Compared to the conventional AJ-HPX3000 camera recorder, AJ-HPX3100 power consumption has been reduced by about 23%.

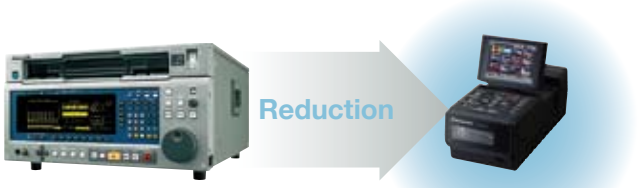
DSP Processor
of AJ-HPX3100

AVC-Intra Codec LSI Board
of AJ-HPX3100

AJ-HPX3000 (2007–2010)
Power Consumption: 44w
(with optional SDI Input, LCD ON)

AJ-HPX3100
Power Consumption: 34W
(Camera Recorder only)

The AG-HPG20 portable recorder also features a new circuit board that achieves AVC-Intra codec recording and playback in a smaller, lighter package with energy-saving efficiency. Compared to a tape-based HD D5 VTR with equivalent image quality, AG-HPG20 power consumption has been reduced to about 1/20.

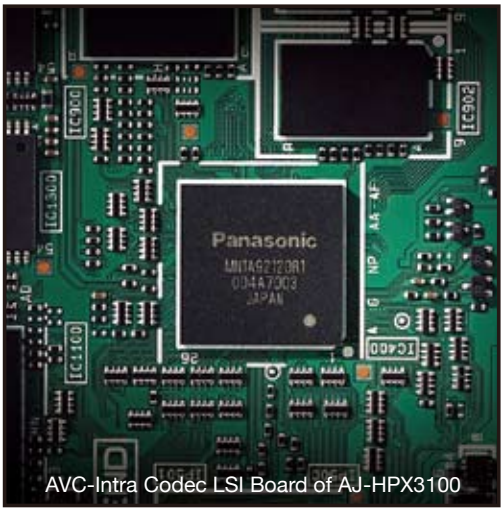


AJ-HD3700B (20003–2010)
Power Consumption:260W

AG-HPG20
Power Consumption:12W

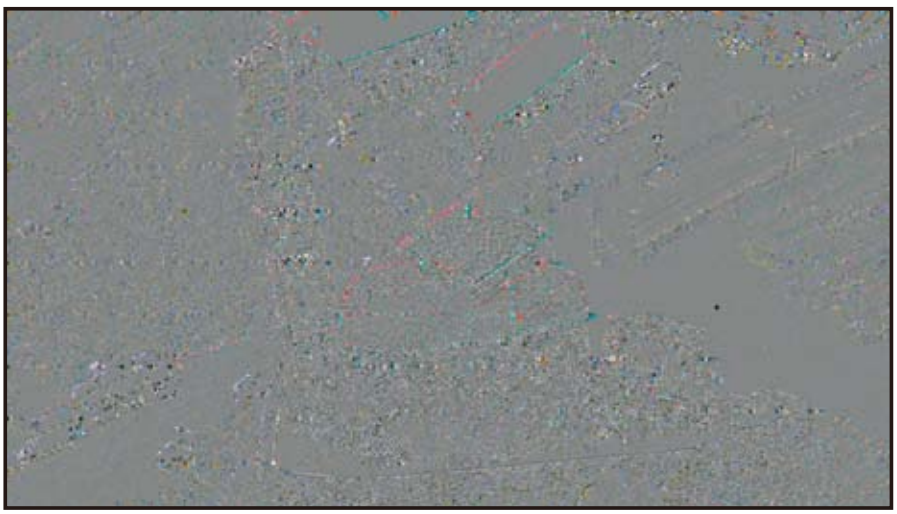
Practical Application of the New AVC-Intra Codec

A New HD Production Style with Stunning Images and Excellent Efficiency



AVC-Intra Codec LSI Board of AJ-HPX3100

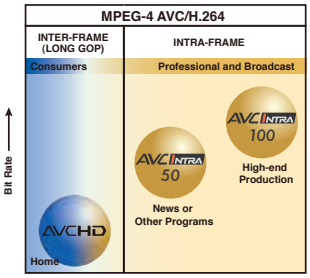
Sample Images of Intraframe Prediction
Upper: Original image
Right: Intraframe predictive image
Bellow: Difference image obtained from subtracting the intraframe predictive image from the original image.
This shows the high accuracy of intra prediction.



AVC-Intra Codec Board of AG-HPG20

New AVC-Intra 100/AVC-Intra 50 Codec

AVC-Intra is a new codec that further advances HD production. It complies with the MPEG-4 AVC/H.264 international standard based on advanced motion-image compression technology, and offers both superb image quality and high compression. It uses an intra-frame compression system to bring important advantages to professional editing.



Modes of AVC-Intra Codec

Applicable products

Camera Recorder	AJ-HPX3700	Standard
	AJ-HPX2700	Standard
	AJ-HPX3100	Standard
	AJ-HPX2000/HPX2100	Option
	AG-HPX370 series	Standard
	AG-HPX250*1	Standard
Recorder	AG-HPG20	Standard
	AG-HPD24*2	Standard
	AJ-HPM200	Standard
	AJ-HPD2500*3	Standard

*1: Scheduled for release in Autumn 2011 *2: Scheduled for release in August 2011 *3: Not available in some area

AVC-Intra 100

With the same bit rate as DVCPRO HD - this mode supports full-HD recording with 1920 x 1080 pixels. It allows camera recorders to capture high-quality, HD-D5-level images.

AVC-Intra 50

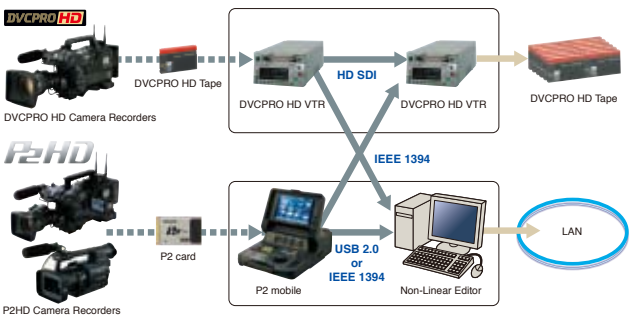
This mode delivers the same high picture quality as DVCPRO HD while using a bit rate similar to SD (DVCPRO 50). It also provides double the recording time of DVCPRO HD and allows quick data transfer and editing.

Codec Mode:	AVC-Intra 100	AVC-Intra 50
1080 Image Size:	1920 x 1080	1440 x 1080
720 Image Size:	1280 x 720	960 x 720
Sampling Format:	10 bit, 4:2:2	10 bit, 4:2:0
Bit Rate:	approx. 100Mbps	approx. 50Mbps
Recording Time (with a 64 GB P2 card):	64 minutes	128 minutes

*The AVC-Intra codec is not supported by the AG-HPX170 series, AG-HVX200A series and AG-HPX500 series.

The DVCPRO HD Codec Fits Smoothly into Your Current Environment

DVCPRO HD codec recording and playback are standard on the P2HD Series. The DVCPRO HD format, which stands at the apex of DVCPRO migration, uses 4:2:2 sampling to retain color information and an intra-frame compression system just like that of AVC-Intra, supporting high-end video production with chromakey composition and high-precision editing. DVCPRO HD is widely used by broadcasting stations and production companies around the world. Because P2 files are recorded with the same codec as the DVCPRO family, degradation-free conversion between tape and file is possible using an IEEE 1394 digital interface. This lets the P2 cam fit smoothly into a tape-based production environment and also allows the use of DVCPRO HD materials in a P2-file-based broadcasting system. HD (SD) SDI and analog interfaces are also provided for added flexibility.



AVC-Intra Technology

Intra-Frame (I-Only) Compression Superiority

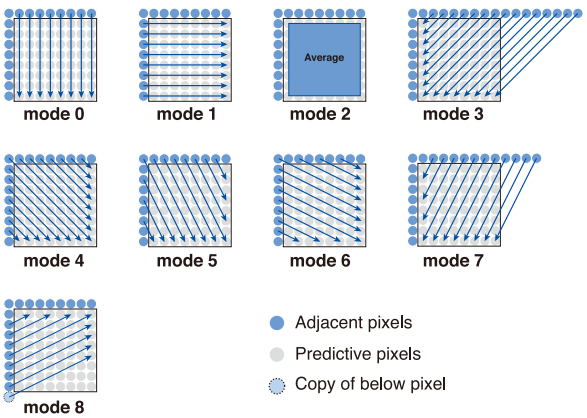
Motion-image compression can be divided roughly into two methods: I-Only compression, which completes all processing within each frame, and Long GOP compression, which processes across multiple frames. AVC-Intra and DVCPRO HD use I-Only compression, while HDV uses Long GOP compression. The MPEG-4 AVC/H.264 standard encompasses both methods.
In the images of broadcasting like flash-filled press conferences, fast-action sports, and music shows with confetti and electronic displays, I-Only compression exerts its superiority.
Also, because processing is performed frame-by-frame in I-Only, new-generation multi-core CPUs offer high-speed parallel processing. This makes I-Only compression more suitable for Non-linear editing than Long GOP, for which parallel processing is difficult due to its inter-frame dependence.
With its I-Only compression, AVC-Intra produces remarkably stable images that are unaffected by adjacent frames, and meets professional needs in virtually all situations and workflows.

Twice the Compression Efficiency of MPEG-2

By selecting the most effective compression techniques from among those in compliance with the H.264 standard, AVC-Intra has doubled the compression ratio of MPEG-2, and with I-Only compression. Its intraframe predictive and context-adaptive entropy coding are particularly effective methods for boosting compression efficiency.

Intraframe predictive coding (intra prediction)

This process generates predictive images based on adjacent blocks of 8 x 8 pixels. Selecting the most suitable predictive mode from among nine luminance signal modes (see illustration) and four color signal modes, it generates accurate predictive images.
The residual data (obtained by subtracting a predictive image from the original input image) is recorded together with the predictive image. Because the prediction accuracy is high, there's minimal residual data, and thus high compression is achieved.
This process is conducted within the frame, so prediction accuracy remains high even with fast-motion images.



Context-adaptive entropy coding

The entropy coding process used in MPEG-4 AVC/H.264 utilizes CAVLC (Context Adaptive VLC) and CABAC (Context Adaptive Binary Arithmetic Coding), both of which are context adaptive. MPEG-2 uses a fixed table when performing the VLC coding, with the result that compression efficiency is low with some types of images. In context-adaptive coding, on the other hand, operation varies with different kinds of images and high compression efficiency is maintained at all times.

P2HD

High-Quality P2HD VariCam for High-End Production, with RGB 4:4:4 Output in Full 1920 x 1080 Pixel Resolution and P-10Log Gamma

AVC-Intra DVCPRO HD

AJ-HPX3700

Memory Card Camera Recorder (P2 cam)

High-End 1080 HD Image Quality for Film/Cinema Production

- 2.2 megapixel 2/3 type CCD for full 1920 x 1080 HD images.
- Recording format: AVC-Intra 100/50 and DVCPRO HD. AVC-Intra 100 uses the 10 bit 4:2:2 sampling.
- HD SDI output of 23.98PsF/24PsF video signals.
- Dual-link HD SDI output for camera through RGB4:4:4/10 bit log gamma signals. Compatible with uncompressed, high-end workflows.
- Dual-link RGB 4:4:4 output with simultaneous 4:2:2 record in-camera.
- Variable frame rate function ranging from 1 fps to 30 fps.
- Selectable gamma modes, including Film-Rec.
- Scan-reverse function for film lens use.
- Grip handle has five threaded holes to mount film accessories.
- The Chromatic Aberration Compensation (CAC) function compensates for slight chromatic aberration at frame edges that cannot be compensated for by the lens (this function requires the use of a CAC-compatible lens).
- High F10 sensitivity at 2,000 lx. Minimum illumination of 0.042 lx (at 1 fps VFR and +30dB gain-up).
- 14 bit A/D processing, 12 pole linear matrix color correction function.
- DRS (Dynamic Range Stretch) provides a wider dynamic range with minimal blown highlights and blocked shadows.
- Scene file, user buttons, user menu and focus assist functions.
- 2 wheel (ND and CC) optical filters.
- 48 kHz/16 bit, 4 channel digital audio recording.

Advanced P2 Memory Card Recording

- Switchable between 59.94 Hz and 50 Hz recording.
- Five P2 card slots allow continuous recording, card selection, hot swapping, loop rec, pre-rec, interval rec and one-shot recording.
- Text memos and shot markers can be added.
- Proxy data recording possible (with the optional AJ-YAX800G).
- USB 2.0 (Host and Device) interface.
- Genlock input, switchable to return video (HD-Y).
- Camera studio system (option) is supported.

AJ-HPX3700 Specification

Power Source :	DC 12 V (11V to 17V)
Power Consumption :	42 W, main unit only
Weight:	approx. 4.9 kg (10.8 lbs), main unit only
Dimensions (W x H x D):	137 mm x 209 mm x 318 mm (5-7/16 inches x 8-1/4 inches x 12-9/16 inches) without handle and option cover (exclude projection)

Multifunctional P2HD VariCam with a Variable Frame Rate from 1 to 60 fps: Superior Creativity and Outstanding Cost-Performance

AVC-Intra DVCPRO HD

AJ-HPX2700

Memory Card Camera Recorder (P2 cam)

Master-Quality and VariCam's Exclusive Variable Frame Rate

- Variable Frame Rate of 1 fps to 60 fps in 720p, for creative overcranked or under cranked shooting.
- Recording format: AVC-Intra 100/50 and DVCPRO HD. AVC-Intra 100 uses the 10 bit 4:2:2 sampling.
- HD SDI Output at 23.98PsF/24PsF Video Signals.
- Selectable gamma modes, including Film-Rec.
- Scan-reverse function for film lens use.
- Two independent HD SDI outputs with parallel use capability.
- Grip handle has five threaded holes to mount film accessories.
- HD progressive 2/3 type 3 CCD system.
- The Chromatic Aberration Compensation (CAC) function compensates for slight chromatic aberration at frame edges that cannot be compensated for by the lens (this function requires the use of a CAC-compatible lens).
- High F10 sensitivity at 2,000 lx. Minimum illumination of 0.021 lx (at 1 fps VFR and +30 dB gain-up).
- 14 bit A/D processing, 12 pole linear matrix color correction function.
- DRS (Dynamic Range Stretch) provides a wider dynamic range with minimal blown highlights and blocked shadows.
- Scene file, user buttons, user menu and focus assist functions.
- 2 wheel (ND and CC) optical filters.
- 48 kHz/16 bit, 4 channel digital audio recording.

Advanced P2 Memory Card Recording

- Switchable between 59.94 Hz and 50 Hz recording.
- Five P2 card slots allow continuous recording, card selection, hot swapping, loop rec, pre-rec, interval rec and one-shot recording.
- Text memos and shot markers can be added.
- Proxy data recording possible (with the optional AJ-YAX800G).
- DVCPRO (IEEE 1394) output terminal*1 for back-up use.
- USB 2.0 (Host and Device) interface.
- Camera studio system (option) is supported.

*1: Outputs DVCPRO HD codec recording only.

AJ-HPX2700 Specification

Power Source :	DC 12 V (11V to 17V)
Power Consumption :	38 W, main unit only, LCD monitor ON
Weight:	approx. 4.9 kg (10.8 lbs), main unit only
Dimensions (W x H x D):	137 mm x 209 mm x 318 mm (5-7/16 inches x 8-1/4 inches x 12-9/16 inches) without handle and option cover (exclude projection)

* Register as a owner for this device to receive a special service warranty up to five years of free warranty repairs.

Featuring a 2.2-Megapixel CCD. High-End Performance in a Compact, Lightweight Design with Low Power Consumption. Also Supports 24 bit Audio.

AVC-Intra DVCPRO HD DVCPRO 50 DVCPRO DV

AJ-HPX3100

Memory Card Camera Recorder (P2 cam)

10 bit Full-HD and 24 bit Audio Meet High-End Production Needs

- 2.2-megapixel 2/3 type CCD for full-HD (1920 x 1080) images.
- The AVC-Intra 100 codec records 10 bit/4:2:2 sampling images.
- A high sensitivity of F11/F12,*1 and an excellent S/N ratio of 59 dB.*2
- Supports high-quality 24 bit audio recording (AVC-Intra 100/50).*3
- Switchable between 59.94 Hz and 50 Hz recording for world wide use.
- SD (480i/576i) recording in DVCPRO 50, DVCPRO or DV codec.
- The Chromatic Aberration Compensation (CAC) function compensates for slight chromatic aberration at frame edges that cannot be compensated for by the lens (this function requires the use of a CAC-compatible lens).
- DRS (Dynamic Range Stretch) provides a wider dynamic range.
- F-REC mode and scan-reverse function.
- Digital Super Gain enables 0.005 lx of minimum illumination.
- Digital Zoom by 2x, 3x or 4x.
- 2 wheel (ND and CC) optical filters.

New Design and Interfaces Improve Mobility and Operating Ease

- A low center of gravity body offers unobstructed views on both sides and weighs approx. 3.9 kg (8.6 lbs) (without accessories).
- Power consumption is approx. 34 W for the camera recorder only.
- The one-clip recording function records multiple cuts in a single clip.
- Text memos, shot markers and metadata such as GPS*4 can be added.
- Scene file, user button and focus assist functions.
- New options enable high-quality proxy video*5 and wireless LAN.*6
- Output for HD/SD SDI and composite monitor out, with built-in downconverter, and HD/SD SDI input are equipped.
- USB 2.0 (HOST/DEVICE), TC IN, TC OUT and GENLOCK IN which can be used for return video in, are equipped.
- UniSlot wireless receiver (option) and camera studio system (option) are supported.

*1: F11 sensitivity is attainable in 1080/59.94i mode, and F12 is attainable in 1080/50i mode.
*2: The S/N ratio is 59 dB when DNR is turned ON.
*3: Only in the AVC-Intra 100/50 mode. For playback, equipment or software compatible with 24 bit audio is required. For details, refer to "Note Regarding 24 bit Audio" on the back cover.
*4: An optional AJ-GPS910G GPS unit is required.
*5: An optional AJ-YDX30 video encoder board is required.
*6: An optional AJ-WM30 wireless module and AJ-SFU3100G an upgrade software key are required.

AJ-HPX3100 Specification

Power Source :	DC12V (11V to 17V)
Power Consumption :	34W, main unit only
Weight:	approx. 3.9 kg (8.6 lbs), main unit only
Dimensions (W x H x D):	140 mm x 270.5 mm x 335.8 mm (5-1/2 inches x 10-5/8 inches x 13-1/4 inches) without handle and option cover (exclude projection)

High-End P2 Camera Recorder that Offers DVCPRO HD (1080i/720p) Recording

AVC-Intra DVCPRO HD DVCPRO 50 DVCPRO DV

AJ-HPX2000/2100

Memory Card Camera Recorder (P2 cam)

High Sensitivity, High Quality HD/SD Recording

- DRS (Dynamic Range Stretch) provides a wider dynamic range with minimal blown highlights and blocked shadows.
- HD Progressive 2/3 type 3 CCD System.
- High sensitivity of F10 (at 2000 lx). Minimum illumination of 0.007 lx (at +74 dB gain).
- 14 bit A/D processing and improved digital image processing technology.
- 12 pole linear matrix color correction function.
- DVCPRO HD (1080i and 720p) recording and playback. 59.94 Hz/50 Hz switchable for recording and playback in any HD system worldwide.
- SD (standard definition) codec (480/59.94i and 576/50i) supports DVCPRO 50, DVCPRO, and DV.
- 48 kHz/16 bit, 4 channel digital audio recording.
- Line recording via HD/SD SDI input (with the optional AJ-YA350AG).
- Supports AVC-Intra 100/50 codec (with the optional AJ-YBX200G).

Reliable P2 Recording and Advanced Functions

- Five P2 card slots allow continuous recording, card selection, hot-swap rec, loop rec and pre-rec.
- The One-Clip Record function enables multiple clips that were recorded separately by start/stop operations to be handled as a single clip.*1
- Immediate playback using a clip thumbnail display.
- Text memos and shot markers can be added.
- Scene file, user buttons, user menu, auto white balance with ATW.
- AJ-HPX2000: 4 Position Optical Filter.
- AJ-HPX2100: 2 wheel (ND and CC) Optical Filters.
- Proxy data recording possible (with the optional AJ-YAX800G).
- IEEE 1394a*2 (AVC), USB 2.0 (Host and Device) interface.
- UniSlot wireless receiver slot.
- Camera studio system (option) is supported.

*1: The camera recorder software must be upgraded to the latest version. For details, visit http://pro-av.panasonic.net/en/index.html
*2: IEEE 1394a input/output are not available for AVC-Intra codec files.

AJ-HPX2000/2100 Specification

Power Source :	DC 12 V (11V to 17V)
Power Consumption :	36 W, main unit only, LCD monitor off
Weight:	approx. 4.5 kg (9.9 lbs), main unit only
Dimensions (W x H x D):	137 mm x 209 mm x 317 mm (5-7/16 inches x 8-1/4 inches x 12-1/2 inches) without handle and wireless option cover (exclude projection)

P2HD

Outstanding Cost-to-Performance and Superb 2/3 type Quality — a P2HD Camera Recorder for Video Professionals

DVCPRO HD DVCPRO 50 DVCPRO DV

AG-HPX500 *series*

Memory Card Camera Recorder (P2 cam)

(AG-HPX500/502, model number varies on regions/areas.)

2/3 type P2 cam for Professional HD/SD Production

- Standard 2/3 type interchangeable lens mount system.
- The Chromatic Aberration Compensation (CAC) function compensates for slight chromatic aberration at frame edges that cannot be compensated for by the lens (this function requires the use of a CAC-compatible lens).
- APT (Advanced Progressive Technology) produces higher image quality with HD Progressive 3 CCD and 19 bit digital signal processor.
- 1080i and 720p HD recording using the DVCPRO HD codec for broadcast use assures both superior images and top reliability.
- 50 Hz/60 Hz selector function allows 1080/50i and 720/50p HD recording for PAL areas.
- SD (480i/576i) recording in DVCPRO 50, DVCPRO or DV multi-codec.
- Four P2 card slots allow continuous recording, card selection, hot swapping, loop rec, pre-rec, interval rec and one-shot recording.
- Text memos and shot markers can be added.
- 48 kHz/16 bit, 4 channel digital audio recording.

Variable Frame Rate Shooting and Variety of Interfaces

- Variable frame rate feature (in 720p, 11 steps) allows film-like slow-speed or quick-speed shooting.
- 720p native mode achieves a speed effect without requiring additional equipment. A VariCam-compatible 720p over 60p mode is also provided.
- Eight-mode gamma, includes two Cine-Like modes.
- Slow, synchro and high-speed shutter.
- Scene file, user buttons, user menu and focus assist functions.
- Output for HD/SD SDI (BNC), Video (BNC) and Component (D4), with built-in downconverter.
- TC input/output provides multi-camera synchro shooting.
- IEEE 1394a (AVC, Host and Device), USB 2.0 (Device) interface.
- RCU terminal for optional AJ-RC10G or AG-EC4G remote control unit.
- Camera studio system (option) is supported.

AG-HPX500 series Specification

Power Source :	DC 12 V (11V to 17V)
Power Consumption :	approx. 23W with Viewfinder and LCD monitor on
Weight:	approx. 3.8 kg (8.4 lbs), without viewfinder
Dimensions (W x H x D):	140 mm x 261 mm x 318 mm (5-9/16 inches x 10-5/16 inches x 12-9/16 inches) without handle (exclude projection)

Full F10*1 Sensitivity from a Newly Developed MOS Image Sensor. High-Quality Images in a Lightweight, Mobile, Compact Body.

AVC-INTRA DVCPRO HD DVCPRO 50 DVCPRO DV

AG-HPX370 *series*

Memory Card Camera Recorder (P2 cam)

(AG-HPX370/371/372/373/374, model number varies on regions/areas.)

High-Sensitivity, High-Quality HD Recording

- Featuring a new 1/3 type MOS sensor for full-HD (1920 x 1080) resolution and F10*1 sensitivity.
- Comes mounted with a Fujinon 1/3 type 17x zoom lens (included)
- Chromatic Aberration Compensation (CAC) function.
- DRS (Dynamic Range Stretch) provides a wider dynamic range.
- Recording format: AVC-Intra 100, AVC-Intra 50 and DVCPRO HD.
- HD multi-format recording: 1080i and 720p.
- SD multi-codec recording in DVCPRO 50/DVCPRO/DV.
- 59.94 Hz/50 Hz selector function.
- Variable frame rate feature (in 720p, 20 steps) allows film-like slow-speed or quick-speed shooting.
- Seven-mode gamma, includes two Cine-Like modes.

Design and Interfaces Improve Mobility and Operating Ease

- This redesigned shoulder mount camera has a low center of gravity.
- Two P2 card slots are provided on the operation panel side.
- The One-Clip Record function enables multiple clips that are recorded separately by start/stop operations to be handled as a single clip.
- Scene file, user buttons, and focus assist functions
- Waveform and vectorscope display.
- A color viewfinder featuring the Liquid Crystal On Silicon (LCOS) display panel for bright, high-resolution images.
- A high resolution, 16:9 aspect ratio, 81.28 mm (3.2 inches) LCD monitor.
- Output for HD/SD SDI and Video, with built-in downconverter.
- USB 2.0 (Host/Device) and IEEE 1394a (AVC)*2 interfaces. TC IN, TC OUT and GENLOCK IN terminals.
- RCU terminal for optional AJ-RC10G or AG-EC4G remote control unit.
- Proxy data recording possible (with the optional AJ-YAX800G).
- Camera studio system (option) is supported.

*1: Its sensitivity is F10 in 1080/59.94i and F11 in 1080/50i.
*2: IEEE 1394a input/output are not available AVC-Intra codec files.

AG-HPX370 series Specification

Power Source :	DC 12 V (11V to 17V)
Power Consumption :	approx. 19 W, with VF, lens and LCD monitor ON
Weight:	approx. 3.6 kg (7.9 lbs), without Lens, approx. battery and accessories
Dimensions (W x H x D):	246 mm x 251 mm x 441 mm (9-11/16 inches × 9-7/8 inches × 17-3/8 inches) excluding prominent parts 246 mm x 251 mm x 549 mm (9-11/16 inches × 9-7/8 inches × 21-5/8 inches) with Fujinon lens, excluding prominent parts

* Register as a owner for this device to receive a special service warranty up to five years of free warranty repairs.

High-Powered Lens, High-Sensitivity Sensor and High-Quality Full-HD 10 Bit 4:2:2 Recording — Shoulder-Type Performance in a Handheld Camera for Broadcasting and Production Work

AVC-INTRA DVCPRO HD DVCPRO 50 DVCPRO DV

AG-HPX250

Preliminary **New**

Scheduled for release in Autumn 2011

Memory Card Camera Recorder (P2 handheld)

Zooming, Sensitivity, Image Quality and Image Expression Rivaling Many Shoulder-Type Models

- 22x (f = 28 mm to 616 mm, 35 mm equivalent) zoom lens with three manual operation rings – zoom, focus and iris.
- Featuring a new U.L.T. (Ultra Luminance Technology) image sensor (1/3 type 2.2 megapixel MOS sensor).
- DRS (Dynamic Range Stretch) provides a wider dynamic range.
- HD multi-format recording: 1080/24p, 1080/25p, 1080/30p, 1080/50i, 1080/60i, 720/24p, 720/25p, 720/30p, 720/50p, 720/60p*1 and SD (480i, 576i)
- 59.94 Hz/50 Hz selector function.
- VFR (variable frame rate): Enables film-camera-like speed effects. 1080 setting: 17 steps of 1fps to 30fps, 720 setting: 25 steps of 1fps to 60fps (both at 59.94 Hz).
- Recording format: AVC-Intra 100, AVC-Intra 50 and DVCPRO HD/ DVCPRO 50/DVCPRO/DV.
- Seven-mode selectable gamma, such as cine-like mode, for rich gradation.
- 4-position (OFF, 1/4 ND, 1/16 ND, 1/64 ND) optical neutral density filter wheel.

Higher Connectivity with SDI Input and Synchronous Input

- New design for easy operation and excellent balance.
- Scene file, user buttons, and focus assist functions.
- Two P2 card slots enable consecutive recording and hot-swapping.
- The one-clip recording function records multiple cuts in a single clip.
- Pre-rec, loop rec, one-shot rec and interval rec capability.
- Text memos and shot markers can be added.
- 48 kHz/16 bit, 4 channel digital audio recording. XLR 2 channel audio input terminals supporting 48 V phantom power supply.
- Genlock input and TC input/output provides multi-camera synchro shooting.
- Equipped with HD SDI output and HDMI output for easy connection to broadcasting and professional systems.
- USB 2.0 (Host/Device) and IEEE 1394a (AVC)*2 interface.

*1: 60i, 24p and 30p, are actually recorded in 59.94 Hz, 23.98 Hz and 29.97 Hz, respectively.
*2: IEEE 1394a input/output are not available AVC-Intra codec files.

AG-HPX250 Specification **[Preliminary]**

Power Source :	DC7.2 V with battery, DC7.9 V
Power Consumption :	16.4W (LCD OFF), 17.0 W (LCD ON)
Weight:	approx. 2.5 kg (5.5 lbs), without battery and accessories
Dimensions (W x H x D):	180 mm x 195 mm x 438 mm (7-1/8 inches x 7-11/16 inches x 17-1/4 inches) without prominent parts

Compact, Lightweight HD/SD Camera Recorder Brings High Image Quality and Easy Handheld Mobility

DVCPRO HD DVCPRO 50 DVCPRO DV

AG-HPX170 *series*

Memory Card Camera Recorder (P2 handheld)

(AG-HPX170/171/172/173/174, model number varies on regions/areas.)

High-Quality HD Shooting

- A 13x zoom lens with 28 mm (35 mm equivalent) wide-angle setting, 72mm diameter and cam-driven manual zoom.
- 1/3 type 16:9 progressive CCD for high image quality and sensitivity.
- High-performance DSP with 14 bit A/D conversion and 19 bit inner processing capability.
- 20 step frame rate selector for creative variable-speed shooting. Features 720p native mode and over 60p/50p mode.
- Selectable gamma including Cinelike mode.

Advanced P2 Memory Card Recording

- HD recording in 1080/24p, 1080/60i and 720/60p in 59.94 Hz model. (1080/25p 1080/50i and 720/50p in 50 Hz model.)*
- SD multi-codec recording in DVCPRO 50/DVCPRO/DV. 59.94 Hz: AG-HPX170/171, 50 Hz: AG-HPX171/172/173/174.
- Two P2 card slots allow up to 128 minutes of continuous HD recording when using two 64 GB P2 cards in full frame rate DVCPRO HD.
- Multifunction P2 capabilities. Hot swapping (changing cards while recording), loop rec, pre-rec, one-shot rec and interval rec capability.
- Text memos and shot markers can be added.
- 48 kHz/16 bit, 4 channel digital audio recording. XLR 2 channel audio input terminals supporting 48 V phantom power supply.

Lightweight, Versatile Interfaces, Professional Design

- Compact hand-held size weighs only 1.9 kg (4.2 lbs).
- Auto or manual operation of focus and aperture.
- Focus assist functions of center zoom, histogram and focus bar display.
- Waveform and vectorscope display. Scene files, user buttons.
- IEEE 1394 and USB 2.0 terminals for PC interface.
- HD/SD SDI output, component output (mini-D), time-code setting via IEEE 1394, and camera remote function.

*60i, 24p, 30p, are actually recorded in 59.94Hz, 23.98Hz, 29.97Hz, respectively. 1080/24p is to be recorded in 1080/60i (59.94i) pull-down. 1080/25p is to be recorded in 1080/50i pull-down.

AG-HPX170 series Specification

Power Source :	DC7.2 V with battery, DC7.9 V with DC input
Power Consumption :	10.9 W, 11.7 W (LCD ON), 13.8 W (Max)
Weight:	approx. 1.9 kg (4.2 lbs), without battery and accessories
Dimensions (W x H x D):	154 mm x 179.5 mm x 397 mm (6-1/8 inches x 7-1/8 inches x 15-11/16 inches) without prominent parts

P2HD

Equipped with P2 Card Slots and DV Tape Drive, A Multifunctional Model for Down-Conversion and Frame Rate Conversion of P2HD Shooting

DVCPRO HD DVCPRO 50 DVCPRO DV

AG-HVX200A *series*

Memory Card Camera Recorder (P2 handheld)

(AG-HVX200A/201A/202A/203A/204A, model number varies on regions/areas.)

HD/SD Multi-Format Recording, Built-in DV Tape Drive

- A 13x zoom lens with, 30 mm (35 mm equivalent) angle of view.
- 1/3 type 16:9 progressive CCD for high image quality and sensitivity.
- High-performance DSP with 14 bit A/D conversion and 19 bit inner processing capability.
- HD recording in 1080/24p, 1080/60i and 720/60p in 59.94 Hz model. (1080/25p 1080/50i and 720/50p in 50 Hz models.)*
- SD multi-codec recording in DVCPRO 50/DVCPRO/DV. 59.94 Hz: AG-HVX200A/201A, 50 Hz: AG-HVX201A/202A/203A/204A
- Multifunction P2 capabilities. Hot-swap (changing cards while recording), loop rec, pre-rec, one-shot rec, and interval rec functions.
- Immediate playback using a clip thumbnail display on the built-in LCD monitor.
- Built-in DV tape drive. Allows DV recording, down-conversion recording from P2HD sources, and frame-rate conversion of clips recorded in native 720p.

Variable Frame Rate Function and Professional Specifications

- 11 step frame rate selector for creative variable-speed shooting. Features 720p native mode and over 60p (or 50p) mode.
- Auto or manual operation of cam-driven zoom, focus and aperture.
- XLR audio input terminals supporting 48 V phantom power supply, magnesium-alloy chassis, zebra, marker and tally lamp.
- Scene file, user buttons, white balance with ATW.
- IEEE 1394/USB 2.0: Directly mountable to Mac/Windows® Non-linear editors. IEEE 1394 output for synchro backup recording. 1394 host mode for copying files onto an external HD.
- Analog component output, time-code setting via IEEE 1394, and camera remote function.

*60i, 24p, 30p, are actually recorded in 59.94Hz, 23.98Hz, 24Hz, 29.97Hz, respectively. 1080/24p is to be recorded in 1080/60i (59.94i) pull-down. 1080/25p is to be recorded in 1080/50i pull-down.

AG-HVX200A series Specification

Power Source :	DC7.2 V with battery, DC7.9 V with DC input
Power Consumption :	11.6 W, 12.0 W (LCD ON), 14.0 W (Max)
Weight:	approx. 2.5 kg (5.5 lbs), without battery and accessories
Dimensions (W x H x D):	168.5 mm x 180 mm x 390 mm (6-11/16 inches x 7-1/8 inches x 15-3/8 inches) without prominent parts

Featuring HD SDI Input for High-Quality AVC-Intra Recording. Ideal for HD Field Recording or for Video Playback at Events.

AVC INTRA DVCPRO HD DVCPRO 50 DVCPRO DV

AG-HPG20

Memory Card Portable Recorder (P2 Portable)

AVC-Intra Codec and HD SDI Input for High-Quality HD Recording

- Three recording and playback codecs supported: AVC-Intra 100 for high-quality 10 bit 4:2:2 images, AVC-Intra 50, and DVCPRO HD
- 1080i (60i/50i), 720p (60p/50p) multi-format and DVCPRO50/DVCPRO/DV multi-codec capabilities.
- HD/SD SDI input/output provided to allow line recording. Enables REC Start/Stop in sync with camera recorder.*1
- Allows up-/down-conversion between HD and SD as well as cross-conversion between 720 and 1080 during playback.

Speeds Up Acquisition Workflow Using P2 Cards and External HDD

- Equipped with two P2 card slots to enable continuous recording, hot-swap REC, loop REC and UMID recording.
- Clip thumbnail display on the LCD monitor can be used for playback, deletion, clip copy, metadata editing, and text memo/shot marker addition.
- Diverse playback functions ideal for video demos and presentations, such as Format Auto, Variable Speed for slow-motion/double-speed playback, Resume, Single-clip and Repeat.
- Supports simplified waveform monitor and vectorscope display.
- USB 2.0 (HOST): For copying files between an external HDD and a P2 card. HDD Preview function allows playback*2 of HDD files.
- USB 2.0 (DEVICE): For transferring files to/from a nonlinear editor
- IEEE 1394a (AVC) interface enables DVCPRO HD/SD stream input/output.

Compact, Lightweight, Battery-Operated Mobility

- At about 1.1 kg (approx. 2 lbs), easy to carry with one hand.
- Battery operation boosts convenience.
- AC power can be supplied via the AC adaptor (included).
- Highly reliable, durable memory card recording has no moving parts, eliminating the concerns of a tape transport.

*1: For interlinked recording, the camera recorder must support this function.
*2: In simplified HDD playback, the frame rate for refreshing the display is reduced.

AG-HPG20 Specification

Power Source :	DC7.2 V with battery, DC7.9 V with DC input
Power Consumption :	approx. 12W
Weight:	approx. 1.1 kg (2.4 lbs)
Dimensions (W x H x D):	104 mm x 83 mm x 227 mm (4-1/8 inches x 3-5/16 inches x 8-15/16 inches) without rubber shoes

* Register as a owner for this device to receive a special service warranty up to five years of free warranty repairs.

HD Recording, HDMI*1 Output and USB 3.0*2 Interface. FULL HD 3D Recording and Playback with Two Units in Sync Operation

AVC-Intra DVCPRO HD DVCPRO 50 DVCPRO DV

AG-HPD24

New

Scheduled for release in August 2011

Memory Card Portable Recorder (P2 portable deck)

AVC-Intra High-Quality Image and 1080/24p Recording

- Three HD recording and playback codecs supported: AVC-Intra 100 for high-quality 10 bit 4:2:2 images, AVC-Intra 50, and DVCPRO HD.
- 1080i (60i/50i), 720p (60p/50p) multi-format and DVCPRO50/DVCPRO/DV multi-codec capabilities.
- 1080/24PsF input/output*3, native 1080/23.98p recording(AVC-Intra).
- Supports VARICAM and other variable frame-rate videos.*4
- Allows up-/down-conversion between HD and SD as well as cross-conversion between 720 and 1080 during playback.
- 24 bit 4 channel*5 or 16 bit 8 channel 48 kHz high-quality digital audio.

Accommodates a Diverse Range of 2D and 3D Work-flows

- RS-422A remote terminal (9 pin) to control as an player.
- Playback function previews P2 files from an external storage device.*6
- USB 3.0 (HOST): Transfers files to an external storage at about four times AVC-Intra 100 normal speed.*7
- USB 2.0 (DEVICE): Uploads files to a PC or nonlinear editor.
- HDMI (3D compatible) out, HD/SD SDI in/out, video monitor out, audio monitor out, headphone out, REF input, TC in/out and XLR audio in.
- Two P2 card slots to enable hot-swap, loop rec and VANC recording.*9
- A USB keyboard*8 (USB 2.0) can be connected.
- Two-Unit Sync Operation for 3D Recording/Playback.*10

Versatile 2U Half-Size and Battery Operation

- Compact size with 2U height and half-rack width, 2 kg (4.4 lbs) weight.
- Built-in front speaker for audio monitoring.
- Battery operation boosts convenience.
- AC power can be supplied via the AC adaptor (included).

*1: Supports 3D. *2: USB 3.0 host interface. *3: Only in AVC-Intra 100/50 mode. *4: Only in 720p mode. *5: Only in AVC-Intra 100/50 mode. For playback, equipment or software compatible with 24 bit audio is required. *6: Playback is based on disk drive performance, including spindle speed. Panasonic cannot guarantee smooth playback without dropped frames. *7: The USB 3.0 standard has a maximum transfer rate of 5 Gbps. However, the actual transfer speed depends on the system configuration. *8: Keyboards with a rating of up to 100 mA can be used. Panasonic cannot guarantee that all USB keyboards will work properly. *9: VANC recording is only possible at 59.94Hz and 50Hz. *10: 3D recording and playback are possible only in the AVC-Intra 100/50 codec.

AG-HPD24 Specification

Power Source :	DC 7.2 V with battery, DC 7.9 V with AC adaptor
Power Consumption :	Approx. 19.8 W
Weight:	Approx. 2.0 kg (4.4 lb), main unit only
Dimensions (W x H x D):	214 mm x 88 mm x 200 mm, without support legs (8-7/16 inches x 3-1/2 inches x 7-7/8 inches)

Advanced P2 Mobile with Versatile Functions Such as Networking, AVCHD Compatibility (Optional) and eSATA Interface It supports 24 bit Audio.

AVC-Intra DVCPRO HD DVCPRO 50 DVCPRO DV AVCHD

AJ-HPM200

Memory Card Recorder /Player (P2 mobile)

Multi-Format HD Recording with AVC-Intra and 24PsF

- Three HD codecs supported: AVC-Intra 100 for high-quality 10 bit 4:2:2 images, AVC-Intra 50, and DVCPRO HD.
- 1080i and 720p recording and playback. 59.94 Hz/50 Hz switchable for any HD system worldwide.
- 1080/24PsF input/output, native 1080/24p recording (AVC-Intra).
- SD (480/59.94i and 576/50i) codec supports DVCPRO 50, DVCPRO, and DV.
- Allows up-/down-conversion between HD and SD as well as cross-conversion between 720 and 1080 during playback, and up-conversion during recording.
- It supports high-quality 24 bit audio (AVC-Intra 100/50).*1

Playlist Editor GUI for Intuitive Operation

- Equipped with six P2 card slots and one SD card slot.
- Play-list function includes advanced GUI and new functions such as independent AV tracks, insert/overwrite modes.
- Direct capture from an external VTR source onto the editing time-line via an RS-422A interface.
- Supports simplified waveform monitor and vectorscope display.

Network Functions and AVCHD Compatibility

- Gigabit-Ethernet-compatible server/client function enables direct file transfer via internet.
- eSATA and USB 2.0 interfaces enable max. 4X (AVC-Intra 100 or DVCPRO HD) high-speed copying to an external HDD and playback.*2
- AVCHD compatibility: playback, recording and cross-conversion between P2HD/AVCHD (with the optional AJ-YCX250G board).
- HD/SD SDI input/output provided to allow line recording. Enables REC Start/Stop in sync with camera recorder.
- IEEE 1394a (AVC) interface enables DVCPRO HD/SD stream in/out.

*1: For 24 bit audio, you may need to update its firmware. Please refer to the "service and support" on the Panasonic Website (http://pro-av.panasonic.net/).
*2: Playback is based on disk drive performance, including spindle speed. Panasonic cannot guarantee smooth playback without dropped frames.

AJ-HPM200 Specification

Power Source :	AC 100 V to 240 V, 50 Hz/60 Hz / DC 12V
Power Consumption :	AC: 60W, DC: 12V/4.8A (full-option)
Weight:	approx. 6.6 kg (14.6 lbs)
Dimensions (W x H x D):	301 mm x 120 mm x 412 mm (11-7/8 inches x 4-3/4 inches x 16-1/4 inches) without rubber shoes

P2HD

A P2 Deck Enhances File-Based Broadcasting Workflows with Versatile Editing, Transmission and Networking Functions. It supports 24 bit Audio.

AVC-INTRA DVCPRO HD DVCPRO 50 DVCPRO DV AVCHD

AJ-HPD2500

Memory Card Recorder/Player (P2 deck)

HD/SD Multi-Format Editing and On-Air Transmission

- Three HD codecs supported: AVC-Intra 100 for high-quality 10 bit 4:2:2 images, AVC-Intra 50, and DVCPRO HD.
- 1080i and 720p recording and playback. 59.94 Hz/50 Hz switchable.
- 1080/24PsF in/out, native 24p recording with the AVC-Intra codec.
- SD (480/59.94i and 576/50i) codec supports DVCPRO 50, DVCPRO, and DV.
- Allows up-/down-conversion between HD and SD as well as cross-conversion between 720 and 1080 during playback, and up-conversion during recording.
- It supports high-quality 24 bit audio (AVC-Intra 100/50).*1

New Playlist Editor GUI for Intuitive Operation

- Equipped with six P2 card slots and one SD card slot.
- Easy manual on-air transmission with one-clip playback and GUI hold.
- New playlist function includes advanced GUI and new functions such as independent AV tracks, insert/overwrite modes.
- Direct capture from an external VTR source onto the editing time-line via an RS-422A interface.
- Supports a simplified waveform and vectorscope display.

Network Functions and AVCHD Compatibility

- Gigabit-Ethernet-compatible server/client function enables direct file transfer via internet.
- eSATA and USB 2.0 interfaces enable max. 4X (AVC-Intra 100 or DVCPRO HD) high-speed copying to an external HDD and playback.*2
- AVCHD compatibility: playback, recording and cross-conversion between P2HD/AVCHD (with the optional AJ-YCX250G board).
- HD/SD SDI In/Out and AES/EBU digital audio In/Out.
- Analog I/O and versatile remote (RS-422A, RS-232C and parallel).
- 4U-size height for mounting into a 19 type rack (with optional adaptor).

*1: For 24 bit audio, you may need to update its firmware. Please refer to the "service and support" on the Panasonic Website (http://pro-av.panasonic.net/).

*2: Playback is based on disk drive performance, including spindle speed. Panasonic cannot guarantee smooth playback without dropped frames.

AJ-HPD2500 Specification

Power Source :	AC 100 V to 240 V, 50 Hz/60 Hz
Power Consumption :	Max. 65 W (full option)
Weight:	approx. 13 kg (28.7 lbs)
Dimensions (W x H x D):	424.0 mm x 175.2 mm x 414.7 mm (16-3/4 inches x 6-15/16 inches x 16-3/8 inches) without support legs, connector and jog dial

Fast Copying from P2 Cards to a Removable Solid-State Drive*1

AG-MSU10

Mobile Storage Unit (P2 MSU)

- Data can be copied from a P2 card to an SSD (up to 2 TB capacity) at about 4X normal speed in AVC-Intra 100.*2
- Equipped with a eSATA/USB 2.0 host/device interface. Data can be transferred from a P2 card to an external HDD, and from an SSD to a PC.*3*4
- eSATA/USB 2.0 terminals are also featured on the removable interface box, allowing direct PC connection.*3
- Battery driven with a compact, lightweight and durable design.

*1: The removable SSD is not included with the product. Use a commercially available removable SSD that is recommended by Panasonic. In addition to the removable SSD interface box that comes with the AG-MSU10 as a standard accessory, an additional AG-MBX10 can be purchased as an option. Do not use Hard Disk Drive instead of an SSD. For compatible SSD information, please refer to the following WEB site. http://pro-av.panasonic.net/en/sales_o/p2/ag-msu10/

*2: File transfer speed varies depending on the SSD and external HDD writing speed, transferred files, P2 card version, and other conditions. Without verification.

*3: A Device mode eSATA terminal is provided on the included removable SSD interface box. In Host mode, files can be transferred only between a P2 card and an external HDD. Files cannot be transferred between an internal SSD and an external HDD. The P2 card/SSD can be used in Device mode, but reading and writing with the P2 card is only possible with the USB 2.0 interface.

*4: When using a P2 CMS (described on page 20), be sure to use the newest version.

AG-MSU10 Specification

Power Source :	DC 7.2 V, with battery / DC 7.9 V, with AC adaptor
Current Consumption :	1.1A
Weight:	AG-MSU10: approx. 770 g (1.69 lbs) without SSD and Battery AG-MBX10G: approx. 135 g (0.3 lbs) without SSD
Dimensions (W x H x D):	99 mm x 58 mm x 212 mm, excluding protrusions (3-15/16 inches x 2-5/16 inches x 8-3/8 inches)

Super Speed USB 3.0 Interface Boosts Workflows for News and Other Productions

AJ-PCD30

Memory Card Drive (P2 drive)

New

Scheduled for release in August 2011

USB 3.0 Interface

- The USB 3.0 interface lets you transfer P2 files at 1.5 Gbps or higher* when connected to a USB 3.0-compatible PC.
- Install the P2 drive into a 5 type bay on a desktop PC.*
- With the AC adaptor, you can use it as a stand-alone external drive.

* When using multiple E Series P2 cards. The actual transfer rate varies depending on the file being transferred, the system, the application software, the P2 card version and other conditions. If the PC does not have a USB 3.0 interface, data is transferred via USB 2.0. The P2 card driver software (provided with the product or downloadable for free) must be installed to read data from or write data to P2 cards.

* The included P2 driver must be installed in the Windows PC or Mac. Read "Notes Regarding the Handling of P2 Files Using a PC" on the back page.

AJ-PCD30 Specification

Power Source:	DC 16 V 0.6 A with AC adaptor, DC 12 V 0.8 A when PC built-in
AC Adaptor:	AC 100 V to 240 V (1.20 A), 50 Hz/60 Hz
Weight:	approx. 1.2 kg (2.6 lbs)
Dimensions (W x H x D):	148.4 mm x 42.5 mm x 199.5 mm, excluding protruding parts (5-7/8 inches x 1-11/16 inches x 7-7/8 inches)
PC System Requirement:	Microsoft® Windows 7 Professional (SP1), Ultimate (SP1) 32 bit/64 bit Microsoft Windows Vista® Business (SP2), Ultimate (SP2) 32 bit/64 bit Microsoft Windows XP Professional (SP3) 32 bit Mac OS X 10.5.8. 10.6.7. Intel® processor 1 GB or more memory

P2 Card Drive with Five P2 card Slots

AJ-PCD35
PCI Express Interface

AJ-PCD20
USB2.0/IEEE 1394b Interface

Memory Card Drive (P2 drive)

- High speed data transfer to Windows PC/Mac based Nonlinear Editor*.
- Install the P2 drive into a 5 type bay on a desktop PC*.
- With the AC adaptor, you can use it as a stand-alone external drive.

AJ-PCD35/PCD20 Specification

Power Source:	AC 100 V to 240 V (1.20 A) 50 Hz / 60 Hz, DC 16 V (0.6 A) with AC adaptor, DC 12 V (0.8 A) when PC built-in
Weight:	approx. 1.2 kg (2.6 lbs)
Dimensions (W x H x D):	148.4 mm x 42.5 mm x 199.5 mm, excluding protruding parts (5-7/8 inches x 1-11/16 inches x 7-7/8 inches)
PC System Requirement:	Microsoft® Windows 7 Professional, Ultimate 32bit/64bit Microsoft Windows Vista® Business (SP1), Ultimate (SP1) 32bit/64bit Microsoft Windows XP Professional (SP2,SP3) 32bit Mac OS X (Intel® based Mac) 10.4.11/10.5.6 /10.6.7, AJ-PCD35: 1 GB or more memory AJ-PCD20: 512 MB or more memory (Windows Vista 1GB)

*The included P2 driver must be installed in the Windows PC or Mac.
Read "Notes Regarding the Handling of P2 Files Using a PC" on the back page.
*You may need to update the software, when P2 card E Series is used.
For more detail, Please visit Panasonic web site (http://pro-av.panasonic.net/en/sales_o/p2/index.html)

USB-Bus-Powered 1-Slot P2 drive Compact, Lightweight, Low-Cost Unit — Ideal for Mobile Applications

AJ-PCD2G
USB2.0 Interface

Memory Card Drive (P2 drive)

- USB bus powered operation, connecting to a PC or a Mac with USB cables (2 cables*1).
- Compact of 25.5 mm (1-1/16 inches) thick, lightweight of 200 g (0.44 lbs) and low-cost.
- High-speed data transfers of 30 MB/s,*2 and comes with driver software for both Windows (7/ Vista /XP) and Mac OS X (10.5/10.6).

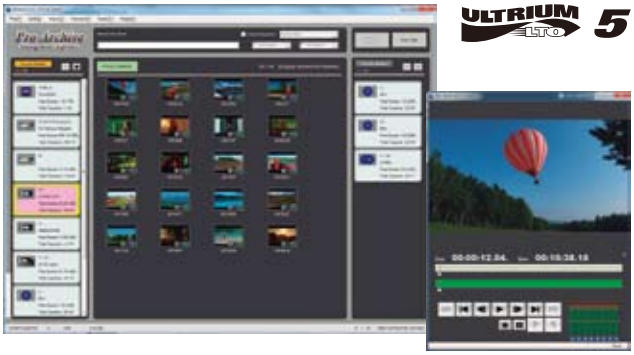
*1: One cable for data transmission and power supply, and the other cable exclusively for power supply.
*2: The 30 MB/s transfer rate is the maximum rate. The actual transfer rate may be lower due to various factors, such as the file being transferred, the performance of the system (computer/OS) used, the application software and the P2 card version.

AJ-PCD2G Specification

Power Source:	DC5V 0.5 A
Weight:	approx. 200 g (0.44 lbs) main unit only
Dimensions (W x H x D):	97 mm x 25.5 mm x 113 mm, excluding protruding parts (3-7/8 inches x 1-1/16 inches x 4-1/2 inches)
PC System Requirement:	Microsoft Windows 7 Professional, Ultimate 32 bit/64 bit Microsoft Windows Vista Business (SP2), Ultimate (SP2) 32 bit/64 bit Microsoft Windows XP Professional (SP3) 32 bit Mac OS X 10.5.6, 10.6.2 (Intel® based Mac) 512MB or more memory (Windows Vista, Windows 7, Mac OS X 10.6 1GB or more memory)

*The included P2 driver must be installed in the Windows PC or Mac.
Read "Notes Regarding the Handling of P2 Files Using a PC" on the back page.

Archives P2, AVCHD*1 and VTR Footage*2 onto LTO, Enables Meta Searches and Direct Playback



AJ-SF100/SF110
New

LTO Archive Software/Video Ingest Software

- Allows the ingestion of all P2 files, AVCHD files*1 and VTR footage*.2
- Proxy data can be generated and metadata can be edited while archiving.
- Video clips archived on LTO media can be directly played back.
- Any desired video segment can be selected and copied to another file.

*1: Future compatibility planned. *2: Requires ingesting by AJ-SF110 Video Ingest Software.

AJ-SF100 PC System Requirement

Hardware:	PC, P2 drive, Storage device such as LTO drive, BD drive* or HDD
Software:	SQL Server 2008 R2 Workgroup
Operating System:	Windows 7 Professional SP1 64 bit (English)
Recommended Environment: • CPU: Xeon X5670 2.93 GHz or faster • Main RAM: 8 GB • A PC operation confirmed by Panasonic: Hewlett-Packard HP Z800 Workstation	

AJ-SF110 PC System Requirement

Hardware:	PC, HD/SD SDI board, HDD drive
Operating System:	Compatible OS: Windows 7 SP1 Professional 64 bit (English)
Recommended Environment: • CPU: Xeon X5670 2.93 GHz or faster • Main RAM: 8 GB • A PC operation confirmed by Panasonic: Hewlett-Packard HP Z800 Workstation	

*Future compatibility planned

Large Data Storage Capacity, High Transfer Speed and Superb Reliability for Professional Use.

AJ-P2E064XG/P2E032XG/P2E016XG

Memory Card (P2 card E Series)

P2 card Specification

Weight:	approx. 45 g (approx. 1.6 oz)		
Dimensions (W x H x D):	54 mm x 5 mm x 85.6 mm (2.13 inches x 0.2 inches x 3.37 inches)		
Capacity	**AJ-P2E016XG**	**AJ-P2E032XG**	**AJ-P2E064XG**
Recording Capacity:*	approx. 16 GB	approx. 32 GB	approx. 64 GB
Rec/Play Time	**AJ-P2E016XG**	**AJ-P2E032XG**	**AJ-P2E064XG**
AVC-Intra 100			
1080/23.98pN, 24pN:	approx. 20 min.	approx. 40 min.	approx. 80 min.
720/23.98pN:	approx. 40 min.	approx. 80 min.	approx. 160 min.
1080/59.94i, 50i, 720/59.94p,50p:	approx. 16 min.	approx. 32 min.	approx. 64 min.
AVC-Intra 50:	approx. 32 min.	approx. 64 min.	approx. 128 min.
DVCPRO HD:	approx. 16 min.	approx. 32 min.	approx. 64 min.
DVCPRO 50:	approx. 32 min.	approx. 64 min.	approx. 128 min.
DVCPRO/DV:	approx. 64 min.	approx. 128 min.	approx. 256 min.

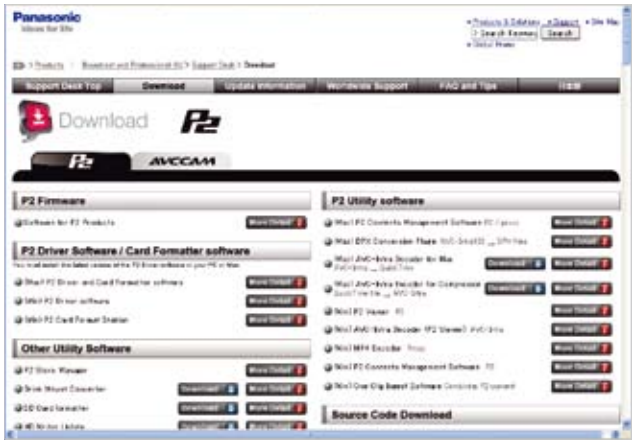
* Total card capacity includes space for data management such as system data, therefore, actual usable area is less than capacity indicated on the card.

Software

Mandatory tool for the all P2 users.
Visit http://pro-av.panasonic.net/ and click "P2 Support and Download"

Support Desk

Website for Downloading P2 Software



P2 Driver

Win Mac

The driver software is required for Windows PC or Mac to recognize the P2 Card.

*Include USB Driver, PCI Express (PCIe) Driver, CardBusDriver, IEEE1394 Driver, P2 Store Manager ,and P2 Card Formatter for Mac (only for AJ-PCD2/PCD20/PCD35/PCD30 and Card Bus Driver). AJ-PCD30 is scheduled for release in August 2011.

P2 Viewer

Win

This viewing application lets you play P2 files on a Windows PC.
Please note that the newest P2 driver must be installed on your PC to use this application.

*This application does not support Mac. For Macintosh computers, please use the P2 Content Management Software.

P2 Contents Management Software

Win Mac

In addition to letting you view P2 content, this application program allows you to ingest data into the HDDs of ordinary PCs, and also manage data within the PC. Please note that the newest Windows or Mac P2 driver must be installed on your PC to use this application.

Applicable Functions

Windows XP Version:	Supports AVC-Intra files and proxy files.
Mac OS X Version:	Supports AVC-Intra files and proxy file DPX conversion function (which runs only on Intel® Mac)

*DPX (Digital Picture Exchange) is an image file format for use in digital film work. Plug-in software must be separately installed for converting from AVC-Intra 100 to DPX files. For details, please see the P2 CMS explanation on page 20.

One Clip Ingest Software

Win

One Clip Ingest Software is for combining the multiple clips on a P2 card or in a folder.

P2 Card Format Station

Win

P2 Card Format Station enables users to perform format, update firmware, and error check the P2 Card through PCMCIA card drive on the PC or P2 Drive AJ-PCD2/PCD20/PCD35 and PCD30*.

*AJ-PCD30 is scheduled for release in August 2011

PC operating condition

OS: Microsoft Windows 7, Windows Vista or Windows XP
Latest P2 driver for Windows must be installed. Log in with Administrator status

Drive Mount Converter

Win

The Drive Mount Converter is a Windows application for managing Type-S hard disks on which P2 card data is copied.

*A Type-S hard disk refers to one that is connected, via USB 2.0 or IEEE 1394, to a P2 device that is equipped with a USB Host or 1394 Host function. The Type-S hard disk is used for copying P2 card data. Please check the Operating Manual for your P2 device to determine whether or not it supports the configuring of a Type-S hard disk. Also, be sure to use a Type-S hard disk that allows connection via USB 2.0 or IEEE 1394.

AVC-Intra Software Decoder for Mac

Mac

(AVC-Intra to QuickTime Transcoder software for Apple FinalCutPro) This Panasonic AVC-Intra Software Decoder enables users to preview and import AVC-Intra format clips recorded by Panasonic recorders on FinalCutPro, by installing on Mac OS installed FinalCutPro software.

Please select version of AVC-Intra Decoder for version of FinalCutPro.

Ver1.5 for FinalCutPro6.0.3-6.0.5

*FinalCutPro7 natively supports decoding of AVC-Intra format.
* Notice: When previewing AVC-Intra on MacBookPro, "Limited Preview" is displayed on Log and Transfer window of FinalCutPro and audio is not able to be monitored.

AVC-Intra Encoder for Compressor

Mac

(QuickTime file to AVC-Intra encoder plug-in for Compressor)

AVC-Intra Encoder for Compressor is a plug-in software that can encode an edited material on Apple FinalCutPro to AVC-Intra100, 50 and export it with QuickTime file or Panasonic P2 on Apple Compressor.
This plug-in has a capability that enables the user to input P2 metadata on Panasonic P2 export mode.

*Notice: This AVC-Intra Encoder plug-in software does not input standard-definition TV format (NTSC/PAL) to transcode. Also it does not convert HD TV format between 1080ip and 720p.
This AVC-Intra Encoder plug-in software inputs only QuickTime file format. In the case of P2 export, 4GB spanned clip in a P2 card is supported, but spanned clip with multiple cards is not supported.

Driver Software for P2 Products

The firmware inside each product is the newest version available.
Upgrading is possible with the use of an SD card.

CAC File for P2 Camera Recorder

(for AJ-HPX3700/HPX2700/HPX3100/HPX3000/ AG-HPX500 series/ HPX300 series/HPX370 series)

The CAC function of the camera corrects the registration error caused by the slight chromatic aberration that the lens cannot compensate for.
This minimizes color bleeding into the surrounding image areas.
Lenses compatible with the CAC function whose CAC data is registered in the camera will automatically start CAC operation.

Supports P2HD. This Windows PC utility makes it easy to view and copy P2 files. It supports 24 bit Audio.

▲ Windows Vista Version

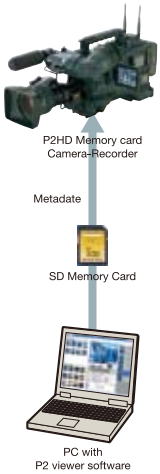
P2 Viewer 3.6

P2 Application Software (Download Free)

- Supports P2 clips (AVC-Intra, DVCPRO HD, DVCPRO 50, DVCPRO, DV) and proxy files.
- It supports high-quality 24 bit audio (AVC-Intra 100/50)*1.
- Displays shot markers, voice memos, HD 16:9 wide, and proxy clip information as thumbnail icons.
- Indicates metadata as tags in clip filtering displays.
- Displays the properties of each clip and allows certain properties to be edited.
- Lets you create metadata for uploading to a P2 cam using an SD Memory Card.
- Lets you play, delete, move, or write text memos and voice memos.
- Lets you copy clips to other P2 cards or hard disks.
- P2 users can download the latest version of this software from the Support Desk.*2

*See page 19 for details about Support Desk.

▲ Metadata edit dialog



PC System Requirements for P2 Viewer 3.6

Operating System:	Microsoft Windows7 (Professional, Ultimate) Microsoft Windows Vista (Business, Ultimate) Microsoft Windows XP Professional (SP3)
Requirements:	Microsoft DirectX 9.0b or later must be installed. P2 driver must be installed.
Recommended PCs:	SD: Pentium 4, 1.5 GHz or higher; 512 MB RAM or more (1 GB or more for Windows Vista) DVCPRO HD: Pentium D, 3.2GHz or higher, 1GB RAM or more AVC-Intra 50: Core2 Duo, 2.66GHz or higher, 1GB DDR2-667 RAM or more AVC-Intra 100: Dual Xeon, 3GHz or higher, 1GB DDR2-667 RAM or more Full-color (32bit) display and an audio function
Languages Supported:	Japanese, U.S. English, Chinese (automatic recognition)

*1:For detail, please refer to "Note Regarding 24 bit Audio" on the back cover. "
*2:DVCPRO HD clips can only be played by PCs that are equipped with a CPU that supports SSE2 commands, such as Pentium M, Pentium 4, Pentium D, and Celeron D. To play back the AVC-Intra format, it is necessary to download the AVC-Intra decoder. To play back the Proxy, it is necessary to download the Proxy decoder.

Easy to Ingest and Manage P2 Content. The Newest Version is compatible with Mac OS X 10.6 "Snow Leopard".

▲ Mac Version

P2CMS 1.4

P2 Contents Management Software (Download Free)

- Supports a plug-in for converting AVC-Intra 100 files to DPX files. This helps to speed up and lower the cost of film production.
- P2 Viewer is built in and able to view P2 contents easily. In addition to the normal play back, able to view with +/- X4 speed at X0.5 steps.
- Displays P2 contents by three modes; Thumbnail, Detail and Text.
- Contents can be speedily retrieved by automatically constructing the data base by using the metadata of P2 contents at the time of ingestion. Able to add, change and delete metadata.
- Quick search of P2 contents by using metadata keyword or categorized view.
- Property window indicates lists of P2 contents metadata. Some metadata can be changed by editing property.
- Text memo and voice memo can be indicated, changed, deleted or added.
- Export: Able to handout and keep by copying P2 contents onto HDD and Optical media.
- Back up: Able to copy P2 contents onto optical media by the native P2CMS format. It aims to back up P2 contents registered in data base. When HDD trouble, P2CMS can restore P2 contents.
- Archive: It automatically deletes MXF files of Video and Audio from HDD after copying onto optical media to reduce the capacity of HDD.
- P2 users can download the latest version of this software from the Support Desk.*

*See page 19 for details about Support Desk.

Operating Environment

• Mac OS X 10.4.11* (Quick Time 7.6.6) • Mac OS X 10.5.8* (Quick Time 7.6.4) • Mac OS X 10.6.4* (Quick Time 10.0) • 2 GHz or higher Intel® Core Duo processor.
• 1 GB or more RAM • 1,024 x 768 or greater display • The P2 driver included with the P2 product must be installed.
* CMS applies to 32bit mode only.
** To play back the AVC-Intra format, it is necessary to download the AVC-Intra decoder. When you convert into DPX files, it is necessary to download the AVC-Intra decoder and DPX Plug-in. The system requirements of the installed software influences the system requirements of the application.

Recommended Environment to Play AVC-Intra Format Clips, and Convert into DPX Files

•Dual CPU configuration quad-core Xeon processor •2 GB or more RAM

*For Windows version, visit http://pro-av.panasonic.net/

Optional Accessories

P2 cam (AJ-HPX3700/HPX2700/HPX3100/HPX2000/HPX2100, AG-HPX500/HPX370 series),
P2 handheld (AG-HPX250, AG-HPX170/HVX200 series) options

CAMERA STUDIO SYSTEM

[Applicable products: AJ-HPX3700, AJ-HPX2700, AJ-HPX3100, AJ-HPX2000, AJ-HPX2100, AG-HPX500 series, AG-HPX370 series]

This new camera studio system boosts the level of cost-performance for a wide range of P2HD and DVCPRO HD camera recorders.
BNC cables transmit degradation-free HD digital images up to 328 feet (100 meters) in addition to giving you full remote control

AG-CA300G
Camera Adaptor
Compact and Lightweight

AG-BS300
Base Station
Two SDI (HD/SD) Outputs and Composite Video Output

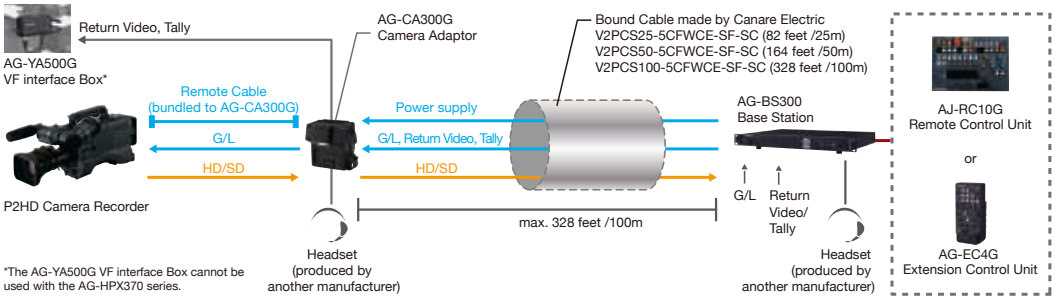
AG-EC4G
Extension Control Unit
For a Studio Camera System or Standalone Camera Recorder

AG-YA500G
VF Interface Box
For Viewfinder Display of Return Image and Tally

*The AG-YA500G VF Interface Box cannot be used with the AG-HPX370 series. The applicable viewfinder varies depending on the camera.

AJ-RC10G*
RCU (Remote Control Unit)
with 32 feet (10 meters) remote control cable
AJ-C10050G
Remote Control Cable
(164 feet /50 meters)

*Not available in some areas. Only functions that are supported by the camera can be controlled by the AJ-RC10G.



AJ-CVF100G
25.4 mm (1 inch) HD Color EVF

Utilizing a 25.4 mm (1 inch) LCOS (Liquid Crystal On Silicon) display panel, the AJ-CVF100G provides cinematographers with accurate colors, fast motion response, excellent resolution, and smooth pixel edges for a natural look and feel, which minimizes the possibility of misdirected shots.

- Applicable Camera Recorder: AJ-HPX3700, AJ-HPX2700, AJ-HPX3100, AJ-HPX2000, AJ-HPX2100, AJ-HDC27H, AJ-HDX900
- Weight: approx. 750 g (1.7 lbs)
- Dimensions (W x H x D): 240 mm x 80 mm x 206 mm (9-1/2 inches x 3-3/16 inches x 8-1/8 inches)
- Power Consumption: 5.0 W

AJ-HVF21G
50.8 mm (2 inches) HD EVF
59.94 Hz/50 Hz switchable

AJ-HVF21KG
50.8 mm (2 inches) HD EVF
59.94 Hz/50 Hz switchable

AJ-VF20WB
50.8 mm (2 inches) EVF
16:9/4:3 switchable

AJ-VF15B
38.1 mm (1.5 inches) EVF
for 4:3

AJ-GPS910G
GPS Unit

SHAN-TM700
Tripod Adaptor

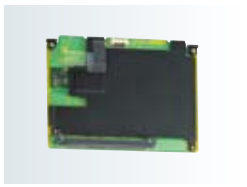
AJ-MC900G
Stereo Microphone

AJ-MC700
Microphone Kit

AG-MC200G
XLR Microphone

AJ-YAX800G
Video Encoder Card

*Camera Recorder software upgrade is required.



AJ-YA350AG
HD/SD Input Board
for AJ-HPX2000/HPX2100

AJ-YBX200G
AVC-Intra Codec Board
for AJ-HPX2000/ HPX2100

AJ-YDX30 NEW
Video Encoder Board
for AJ-HPX3100

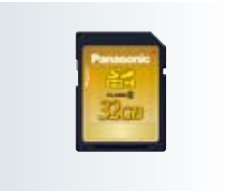
AJ-WM30 NEW
Wireless Module
for AJ-HPX3100
AJ-SFU3100G
Upgrade Software Key
for AJ-HPX3100

AG-B25
AC Adaptor Kit
for AG-HVX200A series

CGA-D54/CGA-D54s
Battery Pack
(5,400 mAh)

AJ-SC900
Soft Carrying Case
*Not available in some area

SHAN-RC700
Rain Cover
*Not available in some area



SD/SDHC Memory Card

AJ-P2E064XG
AJ-P2E032XG
AJ-P2E016XG
P2 Card (E series)

BT-LH910G NEW
228.6 mm (9 inches)
HD/SD LCD monitor

Other Manufacturers' Products

2/3 Type CAC Applicable Lenses for AJ-HPX3700/3100/2700

[Fujinon]
- **HA23x7.6BERM-M58**
- **HA22x7.8BERM-M58**
- **HA22x7.8BERD-S58**
- **HA22x7.3BERM-M58**
- **HA16x6.3BERM-M58**
- **HA16x6.3BERD-S58**
- **HA18x7.6BERM-M58B**
- **HA13x4.5BERM-M58B**

[Canon]
- **KJ22ex7.6B IASE*1**
- **KJ22ex7.6B IRSE*1**
- **HJ22ex7.6B IRSE A*1**
- **HJ22ex7.6B IASE A*1**
- **HJ22ex7.6B IASE*1*2**
- **HJ21ex7.5B IRSE A*1**
- **HJ21ex7.5B IASE A*1**
- **HJ21ex7.5B IASE*1*2**
- **HJ17ex7.6B IRSE A*1**
- **HJ17ex7.6B IASE A*1**
- **HJ17ex7.6B IASE*1*2**
- **HJ14ex4.3B IRSE*1**
- **HJ14ex4.3B IASE*1**
- **HJ11ex4.7B IASE*1**

[Angenieux]*3
- **T26x7.8BESSDHD-AA**
- **T19x7.3BESSDHD-AA**
- **T14x4.5BESSDHD-SB**

*1:The CAC function does not start working until rotation the Focus and Zoom rings from the end to end once, after switch ON the camera recorder.
*2:There are some production lots that are not compatible with the CAC function yet. Please consult your Canon sales if the production lot of the lens you are using is CAC ready.
*3:There are some production lots that are not compatible with the CAC function yet. Please consult your Angenieux sales if the production lot of the lens you are using is CAC ready.
Angenieux: http://www.angenieux.com

2/3 Type CAC Applicable Lenses for AG-HPX500 series

[Fujinon]
- **XA20sx8.5BRM-K3**
- **XA17x7.6BERM-M58B**
- **XA17x7.6BRM-M58B**
- **XA17x7.6BERM-M58D**
- **ZA22x7.6BERM-M58**
- **ZA17x7.6BERM-M58H**
- **ZA17x7.6BERM-M58C**
- **ZA12x4.5BERM-M58**

[Canon]
- **KJ22ex7.6B IRSD PS12**
- **KJ21ex7.6B IRSD PS12**
- **KJ20ex8.5B KRSD PS12**
- **KJ17ex7.7B IRSD PS12**
- **KJ16ex7.7B IRSD PS12**
- **KJ16ex7.7B KRSD PS12**
- **KJ10ex4.5B IRSD PS12**

1/3 Type CAC Applicable Lenses for AG-HPX370 series

[Fujinon]
- **XT17x4.5BRM-K14**

[Canon]
- **KT20x5B KRSD PS12**
- **KT17ex4.3B IRSD PS12**

Bound Cable for Camera Studio System (between AG-BS300 and AG-CA300G)

[Canare]
V2PCS25-5CFWCE-SF-SC (82 feet/25 meters)
V2PCS50-5CFWCE-SF-SC (164 feet/50 meters)
V2PCS100-5CFWCE-SF-SC (328 feet/100 meters)

Power Cable for Camera Studio System (between AG-BS300 and AG-CA300G)

[Canare]
DC50V10-CE01PS-SC (164 feet/50 meters)
DC100V10-CE01PS-SC (328 feet/100 meters)

Canare Electric CO., Ltd.
http://www.canare.co.jp/oversea/mainmenu.html

Anton/Bauer
Dionic Battery

Anton/Bauer
Hytron Battery

Anton/Bauer
UltraLight 2
- **33012**
- **33013**

Optional Accessories

P2 cam, P2 handheld options		AJ-HPX3700	AJ-HPX2700	AJ-HPX3100	AJ-HPX2000 AJ-HPX2100	AG-HPX500 series	AG-HPX370 series	AG-HVX170 series AG-HVX200A series	AG-HPX250
25.4 mm (1 inch) HD Color EVF	**AJ-CVF100G**	Yes*1	Yes*1	Yes	Yes				
50.8 mm (2 inches) HD EVF	**AJ-HVF21G** **AJ-HVF21KG**	Yes	Yes	Yes	Yes				
50.8 mm (2 inches) EVF	**AJ-VF20WB**				Yes*2*3*4	Yes*3*4			
38.1 mm (1.5 inches) EVF	**AJ-VF15B**				Yes*2*3	Yes*3			
2/3 type HD Zoom Lens (CAC Applicable)		Yes	Yes	Yes		Yes			
2/3 type HD Zoom Lens		Yes	Yes	Yes	Yes	Yes			
Anton/Bauer Battery		Yes*6	Yes*6	Yes*6	Yes*6	Yes*6	Yes*6		
Anton/Bauer UltraLight 2	**33012**			Yes					
Anton/Bauer UltraLight 2	**33013**	Yes	Yes	Yes	Yes	Yes	Yes		
AC Adaptor Kit	**AG-B25**							Yes	
Battery Pack (5,400 mAh)	**CGA-D54** **CGA-D54s**							Yes	Yes
Soft Carrying Case	**AJ-SC900**	Yes	Yes	Yes	Yes	Yes	Yes		
Rain Cover	**SHAN-RC700**	Yes	Yes	Yes	Yes	Yes	Yes		
Tripod Adaptor	**SHAN-TM700**	Yes	Yes	Yes	Yes	Yes	Yes		
Stereo Microphone	**AJ-MC900G**	Yes	Yes	Yes	Yes				
Microphone Kit (monaural)	**AJ-MC700**					Yes	Yes		
XLR Microphone (monaural)	**AG-MC200G**					Yes	Yes	Yes	Yes
Base Station	**AG-BS300**	Yes	Yes	Yes	Yes	Yes	Yes		
Video Encoder Board	**AJ-YDX30**			Yes					
Wireless Module	**AJ-WM30**			Yes					
Upgrade Software Key	**AJ-SFU3100G**			Yes					
Camera Adaptor	**AG-CA300G**	Yes	Yes	Yes	Yes	Yes	Yes		
Extension Control Unit	**AG-EC4G**	Yes	Yes	Yes	Yes	Yes	Yes		
VF Interface Box	**AG-YA500G**	Yes	Yes	Yes	Yes	Yes			
RCU (Remote Control Unit)	**AJ-RC10G**	Yes	Yes	Yes	Yes	Yes	Yes		
Remote Control Cable (for AJ-RC10G)	**AJ-C10050G**	Yes	Yes	Yes	Yes	Yes	Yes		
GPS Unit	**AJ-GPS910G**	Yes	Yes	Yes	Yes				
Video Encoder Card	**AJ-YAX800G**	Yes	Yes		Yes		Yes		
HD/SD Input Board	**AJ-YA350AG**				Yes				
AVC-Intra Codec Board*7	**AJ-YBX200G**				Yes				
SD/SDHC Memory Card		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
P2 Card (E series)*7	**AJ-P2E064XG** **AJ-P2E032XG** **AJ-P2E016XG**	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HD/SD LCD monitor	**BT-LH910G**	Yes	Yes	Yes	Yes	Yes	Yes		

Yes: It is possible to use it. *1: Set VF SEL to COLOR in the MENU setting on the camera recorder. *2: The MENU setting on the camera recorder is required. Moreover, it becomes a down-converted image. *3: Either 59.94 (60) Hz or 50Hz can be used. *4: Set DOWNCON MODE to SQUEEZE in the MENU setting on the camera recorder. *5: The camera studio system (AG-CA300G and AG-BS300) is required. Only DC code in the VF cable set can be used. *6: The battery pack that the model can use respectively is different. *7: To use AVC-Intra Codec Board and P2 card, the driver must be updated in some P2 products.

P2 Portable (AG-HPG20), P2 portable deck (AG-HPD24), P2 mobile (AJ-HPM200), P2 deck (AJ-HPD2500), P2 MSU (AG-MSU10), Options

AJ-MA75P
Rack Mount Adaptor
for AJ-HPD2500

AJ-YCX250G
AVCHD Codec Board
for AJ-HPM200 and AJ-HPD2500

CGA-D54/CGA-D54s
Battery Pack (5,400 mAh)
for AG-HPG20, AG-MSU10 and AG-HPD24

AG-B25
AC Adaptor Kit
for AG-HPG20

AG-MBX10G
Removable Interface Box
for AG-MSU10

SD/SDHC Memory Card

AJ-P2E064XG
AJ-P2E032XG
AJ-P2E016XG
P2 Card (E series)

BT-LH910G NEW
228.6 mm (9 inches)
HD/SD LCD monitor

P2 portable, P2 mobile, P2 deck, P2 MSU		AG-HPG20	AG-HPD24	AJ-HPM200	AJ-HPD2500	AG-MSU10
Rack Mount Adaptor	**AJ-MA75P**				Yes	
AVCHD Codec Board	**AJ-YCX250G**			Yes	Yes	
Battery Pack (5,400 mAh)	**CGA-D54/ CGA-D54s**	Yes	Yes			Yes
AC Adaptor Kit	**AG-B25**	Yes				
Removable Interface Box	**AG-MBX10G**					Yes
SD/SDHC Memory Card		Yes	Yes	Yes	Yes	
P2 Card (E series)*1	**AJ-P2E064XG AJ-P2E032XG AJ-P2E016XG**	Yes	Yes	Yes	Yes	Yes
HD/SD LCD monitor	**BT-LH910G**	Yes	Yes	Yes	Yes	

Yes: It is possible to use it. *1: The camera recorder software must be upgraded to the latest version. For details, visit http://pro-av.panasonic.net/

3D Production Systems

3D PROFESSIONAL

High-Quality Images, High Sensitivity, Powerful Zooming and Multi-Camera Versatility. The Integrated Twin-lens Camera Recorder for Broadcast-Level 3D.

AG-3DP1

Preliminary **New**

Scheduled for release in Winter 2011

Integrated Twin-Lens 3D Camera Recorder

Records 3D Images with Powerful Zooming, High Sensitivity and High Image Quality

- The HD twin-lens system with 17x (target) zooming covers a wide range for added flexibility. It requires no pre-shooting adjustment of the optical axis or angle of view.
- Remote control supported for focus, zoom, iris and convergence.
- High sensitivity, high resolution, two pairs of 1/3 type 2.2 megapixel 3MOS sensors, for left and right images.
- The AVC-Intra 100 codec records 1920 x 1080 full-pixel HD 3D with 10 bit 4:2:2 full sampling to deliver stunning image quality.

Multiple Camera System and Camera Extension System Compatibility

- Equipped with GENLOCK IN and TC IN/OUT for synchronization of multiple cameras.
- Camera studio system (optional) is supported.
- Equipped with two HD SDI outputs (simultaneous/side-by-side), RET input and HDMI (3D compatible) output.

A Wide Range of Functions for Broadcasting and Production Work

- Optical ND filters (CLEAR, 1/4ND, 1/16ND, 1/64ND) enable manual exposure setting.
- Variable frame rate feature (in 720p mode only) allows film-like slow-speed or quick-speed shooting.
- HD multi-format recording: 1080 60i/50i/30p/25p/24p, 720 60p/50p/30p/25p/24p
- 59.94 Hz/50 Hz selector function for global use.
- A 2D 2-slot dual recording mode records the left channel onto two* P2 cards simultaneously.
- Focus assist function (enlarged view/focus bar).
- Waveform and vectorscope display.
- TC/UB recording function and genlock function.
- XLR audio inputs (3 pin terminals x2) and XLR microphone input (5 pin terminal).
- 81.3 mm (3.2 inch) 16:9 LCD color monitor with approximately 921,000 dots.
- Optional AJ-HVF21K or AJ-CVF100 Viewfinder can be used.

* Recording onto only a single P2 card is not supported.
* 60i, 24p, and 30p, are actually recorded in 59.94 Hz, 23.98 Hz, and 29.97 Hz, respectively. 1080/24p is recorded in 1080/60i (59.94i) pull-down. 1080/25p is recorded in 1080/50i pull-down.

BT-LH910G NEW
228.6 mm (9 inches) HD/SD LCD Monitor
This compact monitor features a 3D shooting assist function.
*The monitor displays in 2D. Images cannot be viewed in 3D.

BT-3DL2550
647.7 mm (25.5 inches) 3D LCD Video Monitor
This broadcast monitor displays 3D images with lifelike depth.

AG-HPD24 NEW
Memory Card Portable Recorder "P2 portable deck"
AVC-Intra Recording, HDMI*1 Output and USB 3.0*2 Interface. FULL HD 3D Recording and Transmission with Two Units Sync Operation.
*1: Supports 3D *2: USB3.0 host interface

AG-HMX100
Digital AV Mixer
Low-cost HD/SD Digital AV Mixer with easy operation and versatile functions

AV-HS450
Multi-Format Live Switcher
This live switcher supports a variety of 3D output formats and allows wipe, dissolve and other effects. It can switch up to eight pairs of 3D video sources as standard.
*Option Boards: An AV-HS04M7D 3D SDI Output Board is required for 3D output.

AG-3DA1 AVCHD
Twin-Lens FULL HD 3D Camera Recorder
FULL HD 3D images are recorded in the AVCHD codec PH mode. This compact, lightweight less than 1.5 Kg (3.3 lb) allin-one unit is unlike a conventional rig-type 3D camera system.

The P2 Partners

Adobe

- Adobe® Creative Suite® 5 Production Premium
- Adobe® Creative Suite® 5 Master Collection
- Adobe Premiere Pro CS5

www.adobe.com

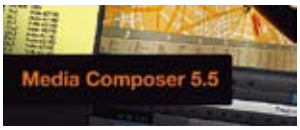
- Final Cut Studio 3

www.apple.com

usa.autodesk.com/

avid.com

AVC-Intra production
Accelerated



www.Avid.com/mediacomposer

bitcentral

• Precis™ • Oasis™ • Newswheel™

www.bitcentral.com

DALET

- Dalet Enterprise Edition
- Dalet News Suite
- Dalet Sports Factory
- Dalet Media Life

www.dalet.com

DVFilm
RAYLIGHT

- RayLight / RayLight for Mac
- MXFX

www.dvfilm.com/raylight/mac/index.htm

www.dvfilm.com/MXFX

EVS

- XT[2]+ Sport & Live Production
- XS Tapeless Studio Production
- Xedio News Modular Production

www.evs.tv

grass valley

- K2 Summit Production Client
- K2 Solo HD/SD Server
- Aurora Suite — Ingest and Edit
- EDIUS 6 Nonlinear Editor

www.grassvalley.com

HARRIS

- NEXIO AMP®
- NEXIO Volt™
- Velocity ESX™
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www.broadcast.harris.com

Imagine

- ShotPut Pro™
- ProxyMill™
- P2 Log Pro™
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MAIN CONCEPT The Codec People®

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  H.264/AVC Broadcast
  Blu-ray 3D/MVC
- MovieExport 1.0 Broadcast

www.mainconcept.com

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Digital Video Solutions

- Matrox MXO2 Family
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MOG

www.mog-technologies.com

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- Spectrum
- MediaPort 7000
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TECHNOLOGIES

New with version 2.2

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www.opencubetech.com

Quantel

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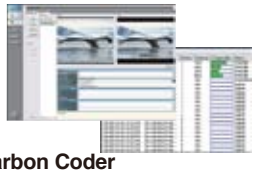
www.quantel.com

RHOZET



- Carbon Coder
- Rhozet QCS
- Rhozet WFS

www.rhozet.com

Telestream

- Pipeline™ HD Dual
- Vantage®
- FlipFactory® ProHD
- Episode®

www.telestream.net

VITEC
Optibase | Focus | Como | Stradis

- FOCUS FS-H
  Portable Proxy Recorders
- COMO ProxSys
  Media Management /
  Archive Solutions

www.FOCUSinfo.com

Please refer to the latest Non-linear Compatibilty Information,
P2 Support and Downlord and Service Information, etc. at Panasonic web site.

http://pro-av.panasonic.net/

*NOTES REGARDING THE HANDLING OF P2 FILES USING A PC

Mounting and Transferring Files

The PC must be installed with the included P2 driver in order to recognize, copy and transfer P2 files. This driver is also necessary when using the PC card slot and when handling P2 files stored on a hard-disk device, such as P2 store. For other operating requirements, refer to the P2 installation manual. The P2 driver and the P2 installation manual can be downloaded free from a Panasonic website. Visit http://pro-av.panasonic.net/ and click “P2 Support and Download.”

Preview and Nonlinear Editing

To preview (play) P2 files on a PC, it is necessary to install P2 Viewer software (downloadable for free, for Windows only) or P2 CMS content management software (downloadable for free, for both Windows and Mac), both from Panasonic, or P2-compatible editing software available from other companies (for details, visit http://pro-av.panasonic.net/en/sales_o/p2/partners.html). Note that each software places specific requirements on the operating environment, and the operating environment must meet additional requirements to play and edit HD content on Windows PCs and Macs. For P2 Viewer or P2 CMS download and operating requirement information, visit http://pro-av.panasonic.net/. For operating requirements and details of other P2 editing software, visit the website of the relevant software manufacturer.

Note Regarding 24 bit Audio

Clips recorded using 24 bit audio must be played back with 24 bit compatible P2 equipment or the P2 Viewer. If clips are played back with equipment not compatible with 24 bit audio, the clip number will be indicated in red and the clips will not be played back. A P2 Viewer not compatible with 24 bit audio will not reproduce the sound properly. To play back those clips, use the latest version of P2 Viewer. For the latest information on 24 bit compatible P2 equipment and P2 Viewer, see “Support & Download” on the Panasonic website (http://pro-av.panasonic.net/).

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Factories of Business Solutions Business Group have received ISO14001:2004-the Environmental Management System certification. (Except for 3rd party’s peripherals.)

SP-P2HDPE10

10K201109ZP-2 Printed in Japan